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AMERICAN JOURNAL OF SURGERY

Devoted to Practical Surgery and Gynecology

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Managing Editor

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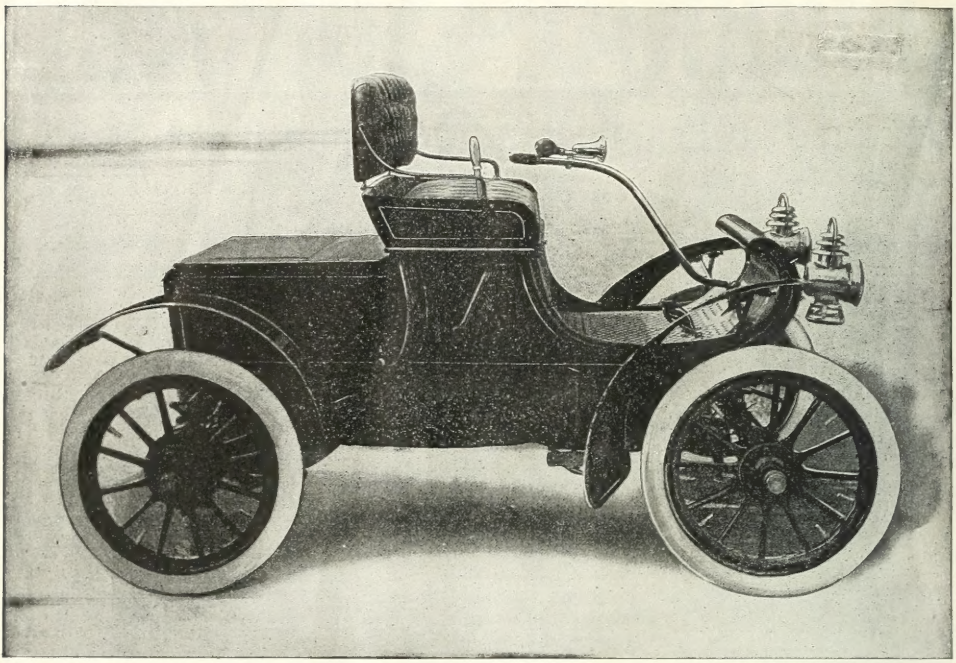

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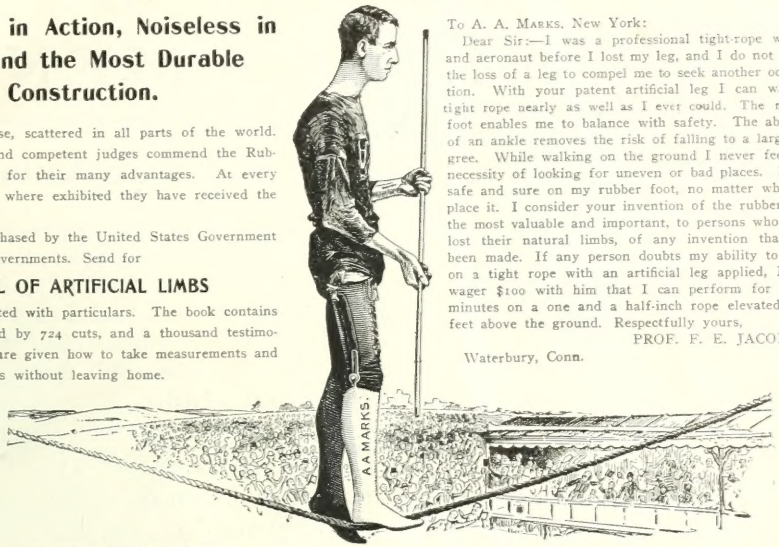

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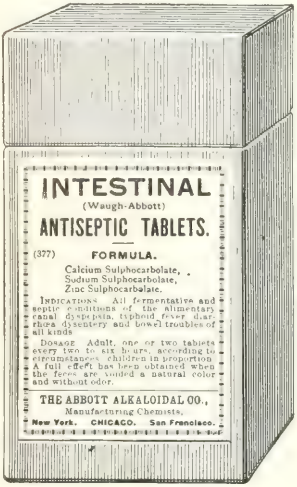
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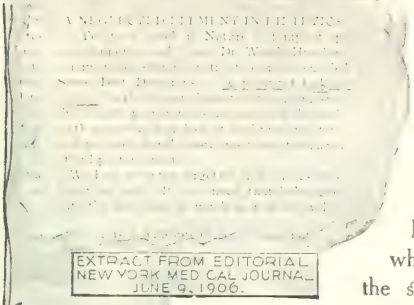

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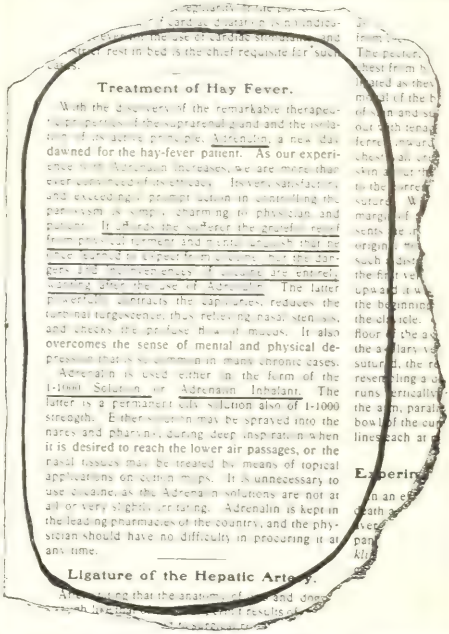

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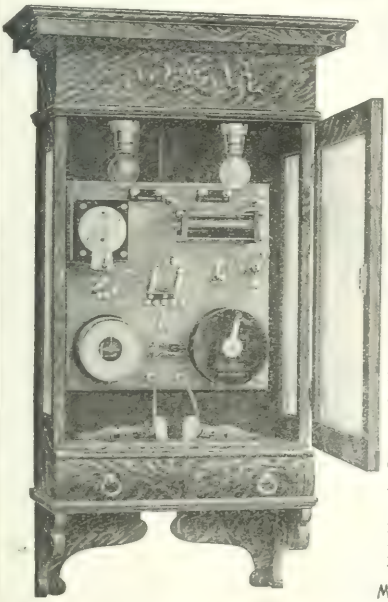

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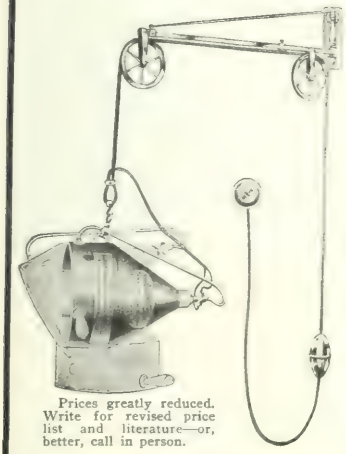

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AMERICAN
JOURNAL OF SURGERY

Vol. XX AUGUST, 1906 No. 8

MALIGNANT AND NON-MALIGNANT GROWTHS.*

By William Seaman Bainbridge, A.M., M.D.,
new york city.

It has frequently been urged against surgeons that they have recourse to the knife in the treatment of cancer when less severe measures would accomplish the desired end. As a rule this is not true. Every right-minded physician and surgeon looks forward anxiously to the time when all surgical treatment of this disease will disappear, and it will be treated or cured by medicinal agents. To this end scientific men as well as empirical laymen are working. While we are seeking for something better than the knife, and are willing to try anything that holds out a reasonable hope of benefit without doing harm, we still have, in the majority of cases, to resort to prompt surgical procedure and will not jeopardize the lives of cancer sufferers by unnecessary delay.

Scores of so-called cancer cures have come to us at the Skin and Cancer Hospital—some accompanied by strong appeals and many testimonials of usefulness—and it is the policy of this institution to sift all the evidence concerning these new remedies, testing such as seem worthy of trial. The x-ray, radium, serum therapy, adrenalin, bacteriotherapy, the various caustics and pastes, iridium, liquid air, trypsin—all have been employed from time to time with indifferent success, some being relegated to their respective fields of usefulness, while others were abandoned. Practically, we are left with nothing but surgical procedure in a large percentage of cases.

To the average layman surgery is a forlorn hope. The failures, the recurrences, stand out in bold relief in his mind, while he knows little of the successes, the amelioration from suffering, which surgery is bringing. It should be the duty of every medical man, whether surgeon or general practitioner, to do all in his power to dispel the ignorance of the masses with reference to cancer and its treatment. Just as the public is being enlightened on the subjects of the great white plague, of sanitary science, of sexual hygiene and of other matters pertaining to disease and health, so it should be impressed with the importance of the early recognition and thorough removal of all growths not easily amenable to other methods of treatment.

What does experience in this and other institutions show as to the usefulness of surgery in the treatment of cancer? Year by year, as these cases are brought earlier and earlier to the surgeon, the percentage of cures is steadily increasing. In the beginning stage of cancer, practically before malignant changes have taken place, or when the cancer is in its incipiency, a very high percentage of cures is being obtained. Let us look at some of the published results of operative measures.

In operations for cancer of the breast, Williams, in 1889, found that the average duration of life, dating from the time the disease was first noticed, is 60.8 months for those who undergo operation, and 44.8 months for those who do not. The average duration of life subsequent to amputation of the breast is 40.3 months. According to Warren 40 per cent. are alive and well at the end of three years after operation. Watson-Cheyne, in 99 unselected cases, found that 56 were free from the disease one to nine years; also that in 61 of the 99, 30 were free from recurrence at the end of three years, and that when recurrence takes place it causes less suffering than if the operation had not been performed. Halsted has recently announced that over 52 per cent. of his patients have lived more than three years after operation without local return or metastasis. According to Bryant the general average of trustworthy reports based on the three year limit shows a rate of cure of about 40 per cent. Richelot claims 10 per cent. of cures, Winter 30 per cent., Olshausen 18 per cent., Schauta 31 per cent., Kaltenbach 14 per cent., Fritsch 36 per cent., and Leopold 53 per cent.

Concerning cancer of the body of the uterus, Ashton says: "Death invariably results unless the disease is cured by radical operation." According to this author hysterectomy, when the disease is lim-

* Abstract of second annual course lecture delivered at the New York Skin and Cancer Hospital, April 18, 1906.

ited to the uterus, gives 60-75 per cent. of permanent cures. In cancer of the cervix he says that death invariably results in from one to two years, in the majority of cases in eighteen months, if the disease is not interfered with. Palliative treatment, by controlling hemorrhage and discharge, prolongs life for several months or even longer. Not more than 5-10 per cent. are permanently cured because they are seen too late, the disease having extended to other parts. Ashton further states that "the operative procedure in the future depends upon the early recognition of the disease, and the general practitioner, therefore, should consult a specialist so soon as there is the slightest suspicion of cancer and not wait until the time has passed for radical operative relief."

From Petersen's studies in the Heidelberg Clinic we find that in 284 cases of rectal carcinoma there was permanent cure of 18-20 per cent. following operative measures. Thirteen patients lived over ten years. In gastric carcinoma life was prolonged four or five months and there was a marked decrease in suffering. In 100 resections for cancer of the stomach Mayo has had 14 deaths, 22 per cent. of those who recovered from the operation living, free from recurrence, more than three years, and one case over five years. Sixteen per cent. of von Mikulicz' cases lived over three years. He has definite reports from 58 patients who recovered from operation. Of these 20 had been living from six months to eight and one-quarter years after operation; 17 a year or more, 10 more than two years, 4 more than three and one-half years. Thirty-eight patients died of recurrence at periods varying from two and one-half to forty-seven months. The average duration of life was over sixteen months. Kocher has cases alive and free from the disease as long as fifteen years.

Statistics might be multiplied indefinitely to show unquestionably that the position taken in regard to the surgical treatment of cancer is rational; but more helpful, more convincing, than abstract statistics, are concrete examples. I shall present a few selected cases to illustrate certain phases of the question. These will be classified under the following heads: 1. Precancerous stage (benign tumors). 2. Early cases. 3. Advanced cases. 4. Cases of irremovable but operable cancer. 5. Irremovable and inoperable cancer, amenable to operation for relief of secondary conditions.

Precancerous or Benign Stage.

I. *Localized Hypertrophy of the Muscle Fibers of the Tongue and the Overlying Mucosa with Its Papillæ.*—Male, aged 33. For the past fifteen years had smoked ten or twelve cigars a day, always holding the cigar so that the butt impinged upon the left half of the tongue. Twelve years ago a lump appeared halfway back on the dorsum of the tongue. This increased in size until it became about one inch long, half an inch thick and half an inch broad. When the patient smoked this increased in size, and when smoking was discontinued for several weeks it at first disappeared, but of late it has persisted whether irritated or not.

On March 8, 1906, under local anesthesia (equal parts of solutions of 4 per cent. cocain in a saturated boracic acid solution and of adrenalin chlorid, one in one thousand), the growth was freely excised, with a margin of healthy tissue, through a longitudinal incision on the dorsum of the tongue. The wound was closed with silk sutures and daily applications of my modification of Whitehead's shellac* were made over the raw surfaces. An antiseptic mouth wash was employed. The wound healed by primary union and the stitches were removed on the eighth day. The scar is hardly perceptible.

Note.—This case illustrates the importance of early operation. Had this benign growth been allowed to remain it would undoubtedly have undergone malignant change.

Early Stage of Malignancy.

I. *Epithelioma of Lip.*—Male, aged 31. Three years ago he first noticed a small pimple on the left side of the lower lip. This gradually increased in size. Nine months after its appearance (two years and three months ago), a small piece of the lip was removed. Two years ago, or three months after this operation, recurrence appeared and the patient was admitted to the New York Skin and Cancer Hospital. At that time the glands of the neck were excised and a small section cut from the lip on the left side. Pathological report showed a few cancer cells in the lip but well developed cancer in the neck. No recurrence to-day.

Note.—This case illustrates: 1. Extensive cancer in a comparatively young person; 2. Recurrence in the lip and secondary extensive involvement of the glands of the neck on the same side down to the bifurcation of the carotid; 3. As a rule, epithelioma of the lip is accompanied by involvement of the glands of the neck; 4. In spite of the quick recurrence (within three months from first operation) patient has remained free since the thorough operation two years ago; 5. The importance, which cannot be too often emphasized, of removing all lym-

* Twice the quantity of benzoin in the compound tincture made with turpentine instead of alcohol, and nosophen substituted for iodoform.

phatics in close proximity to the parts diseased, whether involvement of these be apparent or not.

II. *Epithelioma of the Buccal Mucous Membrane.*—Male, aged 77. Marked atheromatous degeneration of the arteries. Very feeble. About two years ago a pimple appeared on the inner side of the left cheek, near the angle of the mouth. The patient had for years been in the habit of holding tobacco at this point in his mouth. One year ago the growth had reached the size of a silver quarter. At the time of admission to the hospital there was a hard, indurated ulcer with elevated edges. It was not painful except for an occasional stinging sensation. Apparently there was no glandular involvement.

Operation, March 28, 1906. An incision 2½ inches long was made from the left angle of the mouth back to within one-quarter inch of Stenson's duct and down to the masseter muscle, encircling the growth with a margin of healthy tissue. Incision closed by interrupted sutures of black silk. Wound healed by primary union. Stitches removed April 4, 1906. General condition markedly improved after the operation.*

NOTE.—We have here an illustration of the feasibility of operation on the aged. This old man was constantly swallowing cancerous material; the growth had extended to within one-quarter inch of Stenson's duct, upon which it would soon have encroached. He stood the operation perfectly well, and is at the clinic to-day, free from cancer.

III. *Giant-celled Sarcoma or Malignant Epulis.*—Male, aged 27. Great uncle had cancer of the face. Nine years ago the patient's first right lower molar, the roots of which had become diseased, was extracted. No further trouble until a year and a half ago, when a lump the size of a pea appeared internal and anterior to the second right lower molar. This grew slowly at first, then more rapidly, until it filled the space between the two teeth. It was firm and bled easily when irritated. On February 22, 1906, under local anesthesia, Dr. McMullen, of U. S. Marine Service, removed the growth for microscopic examination. The diagnosis of giant-celled sarcoma or malignant epulis was made by Dr. Rosenthal of the Marine Hospital, Washington, D. C., and confirmed by Dr. Wollstein, of New York. On March 17, 1906, patient consulted me. Inspection showed a growth, half the size of a pea, at the inner and anterior margin of the second right lower molar, the site of the old disease. The patient said this had grown rapidly within the last few days.

On March 31, 1906, under general anesthesia, the second right lower molar was extracted. The growth, with a wedge-shaped piece of the inferior maxilla, including mucous membrane and all the tissue in the sockets of the first and second molars, was removed. The raw surface of bone was covered with flaps of mucous membrane from the cheek, and the floor of the mouth sutured with chromicized catgut. My modification of Whitehead's shellac was applied several times a day. Discharged from the hospital April 8th.*

NOTE.—This case emphasizes the importance of having microscopical examination made of all growths removed. Growths in the mouth are not infrequently operated upon several times before a careful study of them is made, and in many instances they are diagnosticated as simple papillomata, when there is already present sarcomatous degeneration which demands radical procedure.

IV. *Carcinoma of Nipple (Paget's Disease.)*—Female, aged forty. Widow; several children. Two sisters had cancer of the breast. Patient first consulted me in July, 1900, for fetid vaginal discharge and impaired general health. She was found to be suffering from marked endometritis, endocervicitis, large ulcerated cervix, hemorrhoids, general enteroptosis, floating right kidney and marked anemia. The uterus was large and soft. She was in no condition for a severe operation, consequently I curetted her, applying iodin to the inside of the uterus and cervix, and operated for hemorrhoids.

In 1902 she again consulted me for return of the ulcers of the cervix and renewal of the vaginal discharge. Beginning Paget's disease was noted at this time. The patient had had eczema around the nipples at intervals since childhood, and constantly for the last fifteen years. For some years a number of lumps appeared in the breasts at the time of menstruation, disappearing upon the cessation of the flow. There had lately been marked induration and increase of the eczema around the nipple, extending over on the breast around the areolar line. The skin had gradually become thickened and firm.

In November, 1902, the following operations were performed at one time: right nephropexy; curettage; amputation of cervix; amputation of both breasts (the patient's condition did not warrant removal of the axillary glands). Uninterrupted recovery. One week after leaving the hospital she strained herself in lifting and produced a right oblique inguinal hernia. She returned to the hospital for three weeks for the Bassini operation. At the present time she is perfectly well and strong,

* June 1, 1906, no recurrence.

* Well, with no recurrence, July 1, 1906.

with no cancer, no fetid vaginal discharge, with the right kidney in place, the uterus in normal position, and with freedom from all serious symptoms. She considers herself a well woman and is able to do all the household work, including washing and ironing, for a family of six.

NOTE.—This case illustrates the number of conditions which it may be found necessary to treat in operating for cancer; also the importance of eliminating all conditions which tend to lessen the patient's vitality, for it is well known that malnutrition is one of the most potent factors in the return of cancer.

V.—*Epithelioma of Lower Lip.*—Male, aged 42. For two years had noticed a growth on the lower lip, half an inch to the left of the median line, which had gradually increased in size. It was treated elsewhere with x-rays for some months, with negative results. On March 25, 1905, the epithelioma was removed and the glands of the neck which, though not palpable, were found to be diseased, were dissected out. No recurrence.

NOTE.—This case again illustrates the fact that glands not palpable may be found diseased and should, for safety, be removed, if the general condition of the patient warrants.

ADVANCED STAGE OF MALIGNANCY.

1. *Epithelioma of Nose.*—Female, aged 60. For thirteen years had been treated in various cities and by various methods, but despite all interference the cancer steadily grew worse. Operation, Febuary 15, 1905. An incision was made over the middle line of the nose, under the eyebrow, under the eye, down on the cheek. All diseased tissue, including a portion of the nasal process of the superior maxilla, was removed, the eye and the nasal duct being saved. A month later the edges of the wound were freshened and the surface covered by a flap taken from the inner surface of the arm on the affected side. The arm was placed over the head, the flap, still attached to the arm, was turned over and sutured by its inner margin to the face, and the head and arm were encased in plaster of Paris, the opposite side of the face being exposed. The arm was left in the erect position twelve days, at the end of which time an anesthetic was administered, the flap detached from its base and left in place on the side of the face (Fig. 3). The wound in the arm healed by granulation. The patient was discharged April 17, 1905, with the flap in place.

On December 4, 1905, she again entered the hospital for the purpose of having the lower edge of the flap set in to the face. The present condition is shown in figure 4. She is now perfectly well, with no recurrence.*

NOTE.—Several operations were performed in this case, previous to admission to the Skin and Cancer Hospital, but none was sufficiently radical to eradicate the disease.

II.—*Carcinoma of Tongue and Glands of Neck.*—Male, aged 61. Mother died of cancer. In July, 1904, patient fell, biting his tongue on the left side. A month later the wound on the tongue became painful and the tongue swollen. When admitted to the hospital, November 12, 1904, a large, indurated, cancerous ulcer involved the anterior two-thirds of the left half of the tongue, extending deep into the organ and involving the floor of the mouth. The glands on the left side of the neck just below the jaw were involved.

Operation, November 15, 1904. A curved incision was made in the submaxillary region, extending from the median line to the angle of the jaw. Both lingual arteries were tied through this incision. Lymphatics, including the submaxillary gland, and the fascia covering the glands, were all removed *en masse;* Wharton's duct was tied off close to the mucous membrane of the mouth. All the teeth of the lower jaw were extracted; and three-fourths of the tongue, with the corresponding part of the floor of the mouth, was removed. The one-fourth of the tongue that remained was pointed and stitched into the floor of the mouth. Healing by primary union. The patient is now perfectly well, able to chew, taste, and talk, and weighs 183 pounds, a gain of 31 pounds since leaving the hospital.

NOTE.—Considered by many too advanced for operation, this patient has already lived a year and nearly eight months since the operation, free from suffering and able to perform his usual duties. No recurrence.

III.—*Adeno-carcinoma of Cervix, Markedly Malignant.*—Female, aged 35. Two children, 20 and 17 years of age. Family history, negative. At the birth of the first child the cervix was badly lacerated. Had had uterine displacement and dysmenorrhea for years. In January, 1905, she began to flow almost continuously. This continued until the middle of September, when the flow occurred about once a week. She first consulted me on October 23, 1905, complaining of profuse remittent discharge, with no clots, but considerable loss of flesh and strength. The uterus was found to be large and soft, the cervix large and of cauliflower appearance, with ulcer-

* This patient was presented at the clinic last year with her arm in plaster over her head. She was exhibited at the clinic on April 18, 1906, to show the final result of the plastic operation. The case was reported at the Practitioners' Society of the Oranges, April, 1906, and at the Atlantic City Academy of Medicine, May, 1906.

ated surfaces which bled easily. The appendages on both sides were large and tender. While the uterus was movable both broad ligaments were very tender and apparently somewhat involved.

Fig. 1. Advanced Stage of Malignancy. Case I. Epithelioma of Nose. Before operation.

Operation, November 2, 1905. The cauliflower mass on the cervix was curetted off, 40 grains to the ounce zinc chlorid applied, and the uterus packed with iodoformized gauze. Abdominal panhysterectomy performed. The uterus was found to be very soft and friable. The broad ligaments were involved, so that it was necessary to remove practically the entire ligament on either side. The ureters were carefully dissected and stood out like whipcords. Care was taken not to constrict them by ligatures in the neighborhood. The appendix was also removed. There was considerable shock, but the

Fig. 3. Advanced Stage of Malignancy. Case I. Epithelioma of Nose. Showing the result of the final operation.

Fig. 2. Advanced Stage of Malignancy. Case I. Epithelioma of Nose. Condition after removal of growth.

Fig. 4. Advanced Stage of Malignancy. Case I. Epithelioma of Nose. Profile view.

patient reacted well. The wound was closed without drainage and healed by primary union. Patient began to sit up at the end of three weeks. Discharged, cured, December 22, 1905.*

NOTE.—This malignant growth had its origin in a deep scar in the cervix, the result of laceration. From vaginal examination many would have considered the case to be inoperable.

IV.—*Extensive Carcinoma of Tongue and Neck.*—Male, aged 49. Mother died of cancer at the age of 74. In May, 1902, patient first noticed a small pimple, half-way back on the dorsum of the tongue. When first seen by me, December 26, 1903, there was a hard, crater-like ulcer (3 by 2 by 4.5 cm.), involving the left anterior third of the tongue, except at the tip. No glands palpable at this time. Microscopic examination of a section of the ulcer, made by two independent authorities, confirmed the diagnosis of a very vascular epithelioma. Immediate operation being refused, potassium iodid, a mouth wash and tonics were prescribed, and systematic x-ray treatment employed for nine weeks. The patient's general and local condition grew steadily worse. This treatment was discontinued March 1, 1904, by which time the growth had extended to the right half of the tongue and induration of the floor of the mouth was evident. Some cervical glands were distinctly palpable on both sides of the neck.

On March 11, under chloroform and oxygen vapor anesthesia, the following operation was performed: First incision, across the neck practically from the tip of the left mastoid process to that of the right, and below as far as the thyroid cartilage. Second incision, along the anterior border of the left sterno-cleido-mastoid muscle to within an inch of the clavicle. The submaxillary and sublingual glands on either side were removed and the salivary ducts extirpated clear into the mouth. Many cancerous glands were removed, from the region of the tonsil on the left side to the dome of the pleura, and on the right side from the tonsil to the division of the carotid artery. The wound was closed except for a small drain at the lower part. The mouth was next forced open, and part of the large cauliflower mass on the tongue cut down with Paquelin cautery. The cauterized surface was coated daily with Whitehead's shellac. The wound healed by primary union.

On March 28th a second operation was performed, when the left corner of the mouth was incised as far back as the edge of the masseter muscle, the tongue drawn out and completely removed by an elliptical incision on the floor of the mouth encircling the tongue in front and on each side. A flap of mucous membrane and muscle from the right glosso-epiglottic fold was used in making a bridge of tissue across the fauces in front of the epiglottis. The wound in the floor of the mouth was closed by chromicized catgut and covered with shellac. The wound in the cheek was closed in the usual way and shellac applied. Convalescence uneventful. Discharged cured, April 21, 1904.*

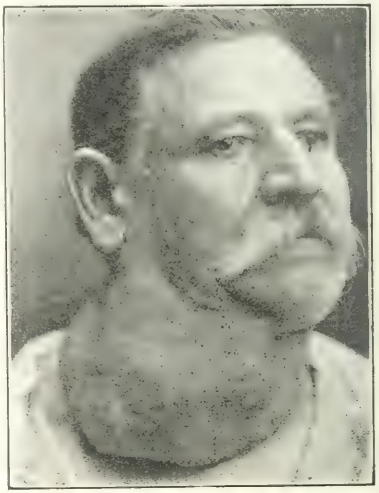

Fig. 5. Advanced Stage of Malignancy. Case V. Lymphadeno-carcinoma. Before operation.

NOTE.—This patient is shown again because of his freedom from cancer for two and one-half years. He continues to gain in weight; since leaving the hospital he has been working practically every day, has married and is now the father of one child.

V.—*Lymphadeno-carcinoma,* chronic Bright's disease, chronic endocarditis, cardiac hypertrophy and dilatation, general atheroma.—Male, aged 57 Referred to me by Dr. William McChristie, of New York. For ten years had had a growth on the right side of the neck which gradually extended until it occupied almost the entire space between clavicle and mandible, and from the median line in front to almost the median line behind. No pain, but great difficulty in respiration, especially when walking or sleeping. On November 11, 1904, at one of the large hospitals of the city, an attempt was made

* July 1, 1906, perfectly well; no recurrence.

* The patient appeared before the New York State Medical Society, at Albany, February 2, 1905; by request at the Kings County Medical Society in Brooklyn, March 21, 1905; at the clinic of the Skin and Cancer Hospital, March 29, 1905, and the case was reported in full in *American Medicine*, March 25, 1905. July 1, 1906, he is still perfectly well.

to remove the growth, but after the incision the condition of the patient, in the judgment of the operating surgeon, made it impossible to proceed. The wound was accordingly closed and the patient discharged from the hospital a few weeks later. The tumor increased somewhat in size, and the difficulty in respiration and deglutition markedly increased. When he was admitted to the Skin and Cancer Hospital, February 13, 1906, the mass was almost immovable; extending from mandible to clavicle, overhanging the clavicle, as shown in figure 5; somewhat irregular in outline; the skin apparently not attached to the growth except along the semicircular scar from the previous operation. The larynx was pushed to the left to within half an inch of a line drawn from the angle of the jaw downward. The patient was somewhat cyanotic, the heart's action irregular. The second day after entering the hospital and before operation he had an increase in a general pruritic rash, supposed to be caused by the cardiac condition.

Operation, February 17, 1906. Vapor anesthesia. A long incision was made over the central part of the tumor commencing an inch below the jaw and extending to one inch from the clavicle in the line of the old incision; flaps turned up and down. Terrific bleeding. Glands were partly broken down and taken out in pieces; by working under the main mass glands the size of a hen's egg were enucleated under the trapezius muscle, over the trachea and along the subclavian vein. The facial artery was tied. The internal jugular seemed to be incorporated in the mass, so a temporary ligature was passed around the vein close to the clavicle and another just below the angle of the jaw. By slight traction the vessel was ruptured, hence a section of it was removed, the temporary ligatures being tied. The pleura, phrenic nerve, spinal accessory nerve, vagus and inferior laryngeal could be seen. The wound was closed with catgut, drains being left in in front and behind. The patient left the hospital March 21 with wound practically healed.*

NOTE.—Both the patient and the patient's family were advised of the seriousness of this operation, but because of the suffering they begged that the slight chance afforded by operation be taken.

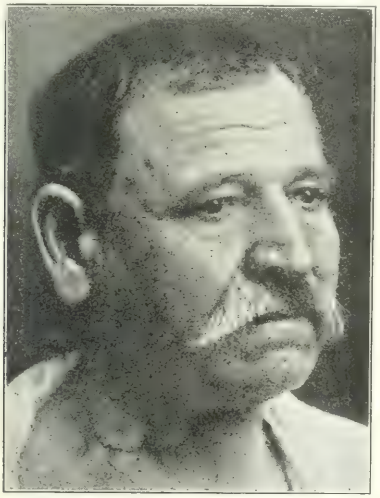

Fig. 6. Advanced Stage of Malignancy. Case V. Lymphadenocarcinoma. After operation.

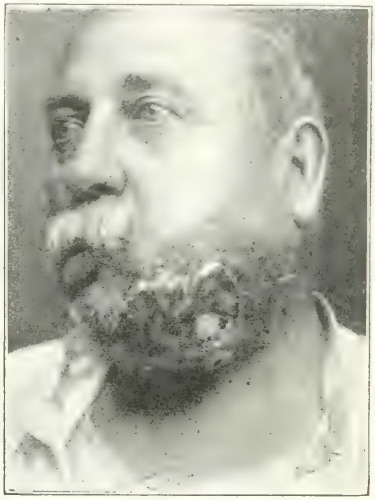

Fig. 7. Irremovable but Operable Cancer. Case I. Carcinoma of Left Mandible. Previous to operation.

IRREMOVABLE BUT OPERABLE CANCER.

I.—*Carcinoma of Left Mandible.*—Male, aged 68. In 1862 he received an injury on the left side of the jaw by falling on the end of a log. In October, 1905, he was operated upon for carcinoma of the left mandible by the late Dr. George R. Fowler. Part of the left lower jaw was removed and many of the glands of the neck. The patient was referred to me by Dr. W. W. Hewlett, of Babylon, L. I. When first seen by me recurrence of the previous trouble had taken place and a large, hard, fungating mass was found extending from just above the lower border of the left mandible above to the level of the thyroid gland below; from the middle line in front

* July 1, partially well. No evidence of [illegible] tumor. Has been at regular work for [illegible] weeks.

to just beyond the lower portion of the ear behind. Two openings were seen in this mass, one one and one-half inches deep in the center of the mass, another three-quarters of an inch deep anterior to this. Both openings had been discharging sero-pus since the operation in 1905.

Operation, February 19, 1906. A transverse incision was made across the neck. The external carotid artery was found to be softened around the bifurcation, the disease involving this and extending somewhat onto the internal carotid. Accordingly the common carotid artery was tied off in two places low down and the external high up; also a ligature was passed around the internal just above the bifurcation. As much as possible of the diseased tissue, which extended into the mouth and to the commencement of the esophagus, was curetted away,

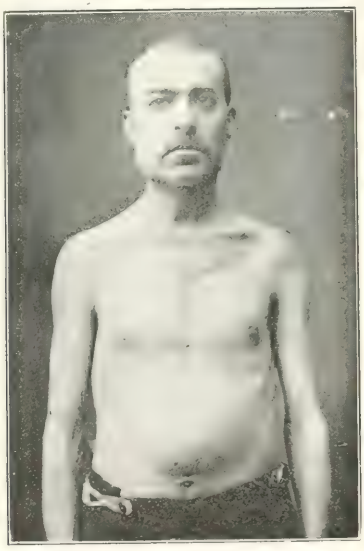

Fig. 8. Irremovable and Inoperable Cancer. Operable for Relief of Secondary Conditions. Case 1. Abdominal Carcinosis. Showing tumor after first operation.

and the remainder of the left half of the lower jaw removed. A small drain of gauze soaked in my modification of Whitehead's shellac was inserted in the opening between the pharynx and the wound cavity, thus sealing it and preventing the passage of food and fluids from the mouth through this opening. The patient had severe shock, but soon reacted to medicines and saline enteroclysis. The wound was frequently dressed. It rapidly contracted. The patient was discharged from the hospital greatly improved, April 7, 1906. Wound granulating well.

NOTE.—Operation saved this patient from hemorrhage, relieved to some extent the terrible suffering, and prolonged life for two months, during which time he walked about his farm, comparatively comfortable. Dysentery developed two weeks before his death. It was impossible to control it, and death resulted from exhaustion.

IRREMOVABLE AND INOPERABLE CANCER; OPERABLE FOR RELIEF OF CONDITIONS SECONDARY TO THE CANCER.

I.—*Carcinosis of Abdominal Organs.*—Male, orthodox Hebrew, forty years of age. Had been

Fig. 9. Irremovable and Inoperable Cancer. Case I. Growth at greater curvature, anterior wall, with encroachment upon pyloric orifice.

treated for a year at eight or ten dispensaries for indigestion. When he entered the hospital, the latter part of December, 1903, he was vomiting everything, and was very weak and emaciated. Stimu-

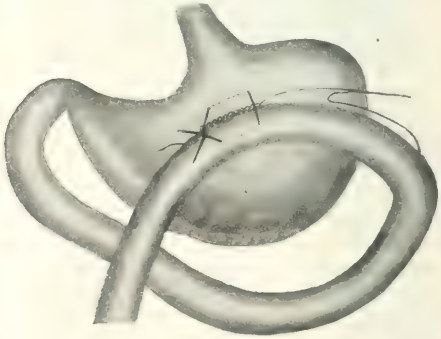

Fig. 10. Irremovable and Inoperable Cancer. Case I. First stage in McGraw ligature operation.

lants and rectal feeding had to be resorted to. There was tenderness in the region of the stomach, where a tumor the size of an orange could be felt. When operated upon, January 5, 1904, a cancerous growth was found to involve part of the greater curvature

and posterior wall of the stomach, with some constriction at the pylorus. There were nodules of carcinoma in the liver, in the omentum and transverse mesocolon. An anterior gastro-jejunostomy was performed by the McGraw method. The condition of the patient did not warrant entero-enterostomy.

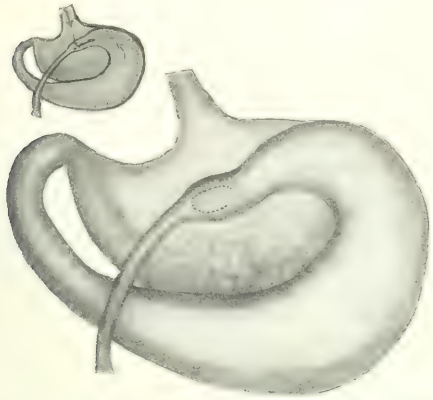

Fig. 11. Irremovable and Inoperable Cancer. Case I. Condition at second operation, showing encroachment of growth upon the patency of the intestine, with dilatation of the proximal arm.

The patient made an uninterrupted recovery, and at the end of ten weeks, resumed his work as a tailor.

In May, 1904, he began to vomit again. In this instance, however, the vomiting differed from the first, in that he would eat all day, his abdomen would swell, he would retch, but could not relieve himself

Fig. 12. Irremovable and Inoperable Cancer. Case I. Showing what was done at second operation, viz., gastro-enterostomy and entero-entero-stomy, both with McGraw ligature.

by vomiting, until he pressed his hands over the abdomen from right to left.

The patient was operated upon a second time in June, 1904, when the growth was found to have invaded the artificial communication between the stomach and the intestine, shutting off completely the passage of food into the distal loop of the intestine, thus the proximal arm of the gut was dilated, forming, as it were, an accessory stomach in which the food accumulated during the day. Another communication was established between the stomach and intestine by the McGraw method between the dilated proximal arm of the gut and the anterior wall of the stomach high up, and between the proximal intestinal arm and the intestine below. The patient made a speedy recovery, and six weeks after this operation fully resumed work as a tailor.

The patient died in August, 1905, after three or four weeks of edema of the lower extremities, ending in general anasarca.*

NOTE.—In this case it was impossible to remove the cancer, even in part, but by operating for the relief of other conditions caused by the cancer, life was prolonged one year and eight months. Without the relief which only surgery could give the man would have died in a very few weeks after he entered the hospital.

THE SURGICAL TREATMENT OF GONORRHEA IN WOMEN.†

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WASHINGTON, D. C.

When I was invited by your committee to read a paper upon the surgical treatment of gonorrheal infection in women I felt the task was a prodigious one. The limited amount of time allotted for the paper, however, permits me to omit lengthy consideration of some of the invasions of this microorganism.

The anatomical structures of women invaded by the gonococcus are:—the vulva, including Bartholin's glands; the vagina; the cervix; the uterine body; the Fallopian tubes; the ovaries; the peritoneum; the pelvic fascia; the urethra, including Skene's glands; the bladder; the ureter, and the kidney.

Strictly speaking, the only active treatment of gonococcal invasion of the genitourinary organs in women is surgical. I take it, however, that you expect a discussion of the most severe forms in their surgical aspects. I shall therefore pass over, without comment, infections of the vulva, vagina and urethra, giving only brief consideration to gonorrheal ureteritis and nephritis, and considering

* Patient was presented at the clinic at the Skin and Cancer Hospital in 1905, at the Westchester County Medical Society and the Surgical Section of the Academy of Medicine; reported at the Practitioners' Society of the Oranges, April 27, 1906, and at the Atlantic City Academy of Medicine, May 11, 1906.

† Read by invitation before the Academy of Medicine of New York, April 5, 1906.

more at length invasions of the uterus, Fallopian tubes and ovaries and adjacent structures.

That gonorrhea ever involves the ureter and kidney is doubted by not a few gynecologists. They believe the peculiar mechanism of the ureterovesical junction acts as a perfectly reliable barrier to extension of the disease along the mucosa. Considering the frequency of gonorrhea in the urethra of both sexes, and the frequent urethral applications and injections made over extended periods of time which frequently convey discharges back into the bladder, I wonder that gonorrheal ureteritis and nephritis are not more commonly encountered. There should be no doubt, however, in our minds that this invasion is quite common.

We have no hesitancy in many cases of pus tubes in pronouncing the etiological factor the gonococcus, though failure attend attempts to discover this micrococcus in the pus or tubal wall. We are content to rely upon our knowledge of the tissue changes brought about by this germ and the clinical history of each individual case for a diagnosis. In chronic ureteral tuberculosis we are often obliged to rely upon the same data, as the tubercle bacillus is frequently not discoverable. Moreover, numerous cases of pyonephrosis rapidly following urethral gonorrhea have appeared in medical literature. Sowers of Washington, had a very interesting case of this kind, in which the pus bored through the diaphragm and lung and was expelled from the bronchi. About the only form of ureteral involvement by the gonococcus that requires operation is severe forms of stricture. This may be an indication for ureterotomy or even ureteral resection. Of course, the proper treatment of gonorrheal, as well as of any other form of pyonephrosis, is nephrotomy, with a possible nephrectomy, secondary or primary.

We now come to the consideration of gonorrhea of the uterus, appendages, etc.

A thorough knowledge of the behavior of the gonococcus in these tissues and of the pathology of its invasion is of paramount importance in discussing its surgical treatment, but I must assume this is known to each of you. Probably gonorrhea involves the uterus and appendages much more frequently than is generally supposed. Brünseke and Seifert found in 200 cases of acute gonorrhea that the urethra was involved in ninety per cent. of them and the cervix in thirty-seven and a half per cent. Other observers have found the disease located in the cervix in even fifty per cent. of the acute cases. The following facts demonstrate the advisability of attempts to cure the condition at this stage by prompt treatment. In the first place, the disease is for a considerable time limited to the mucosa and extension along the uterine or vaginal mucosa may by active treatment be prevented. Then, too, we must face the important fact that in chronic gonorrhea the uterine mucosa and muscularis and the Fallopian tubes, as well as the ovaries, are usually involved. In 100 cases of chronic gonorrhea observed by Bumm, the urethra alone was involved in 6, the cervix and urethra in 37, and the cervix alone in 57. The cervix was thus found to have been involved in 94 of the 100 cases. The body of the uterus was found involved 54 times and the tubes 43 times, according to symptoms. The variation of the statistics as to location of acute and chronic stages, points positively to the propensity to extension as a prominent feature of the disease. Surely this points also to the urgency for prompt treatment of acute gonorrhea. Were more evidence necessary we might refer to the paramount gravity of gonococcic invasion of the Fallopian tubes, to the marked tendency to abortion noted in the gonorrhoic uterus, and to the rekindling of the disease frequently so long as it lurks in these structures. Of this early treatment I shall not speak, for my remarks are limited to operative measures. I cannot, however, overlook the necessity for active treatment of acute gonorrhea located in the urethra and cervix before tissue changes have taken place. After the organism has penetrated to deeper structures, eradication cannot be expected, except in fortunate cases where the deeper structures are removable. In chronic gonorrhea spontaneous recovery cannot be expected nor can we hope for non-surgical cure.

For convenience of consideration surgically, a distinction between acute and chronic gonorrhea of the uterus and appendages should be made. In acute gonorrhea probably the very best treatment is non-operative. The patient should be kept as nearly absolutely quiet as possible, icebags applied to the hypogastrium, etc. In fact, the treatment is precisely that of acute pelvic peritonitis. The indications for such treatment are that the microorganism is usually accompanied by the staphylococcus or streptococcus, that the former of these two, as well as Neisser's organism, is prone to remain for a considerable time in the mucosa, that occasionally spontaneous recovery occurs, and that the danger of septic infection from surgical procedures is very great.

I would limit, then, the surgical treatment of gonorrhea in the uterus and appendages to the chronic cases. Nevertheless, we should not forget that in some instances the accumulation of pus in the cul-de-sac of Douglas may occur so rapidly and

extensively that operation during the acute stage of the disease is imperative. In fact, whenever pus escapes from the tubes into the peritoneal cavity it is an indication for its surgical evacuation. Here the vaginal route is the best. Such liberation of pus probably hastens the appearance of the chronic stage and prevents the prolonged toxemia incident to absorption of a large amount of pus allowed to remain. It therefore, tends to fit the patient for a radical operation.

Reduction of mortality does not concern us as much in the treatment of chronic gonorrhea as does the lessening of morbidity. I need not refer to the long-standing symptoms, and the fresh invasions so common. When, from failure in the treatment of acute gonorrhea of the genital tract before it has invaded the uterus, or failure to detect the disease, it has passed to the endometrium, we may feel sure it will attack the Fallopian tubes. It may rarely be limited to the endometrium, and if allowed to become chronic without interference, it may then be safely treated locally. It is in such condition I would advise the use of the sharp curette, followed by tincture of iodin carefully applied on cotton and in full strength. Even this treatment may, in a few cases, not eradicate the disease. Indeed, it may, very rarely, hasten extension to the tubes. I believe that this latter is not common, but I admit that involvement of the utricular glands beyond the reach of the curette and iodin is possible and that the irritation of these structures by these agents may rekindle the activity of the gonococcus. That the tubes were found involved in 43 per cent., and the endometrium in 54 per cent., of the cases of chronic gonorrhea demonstrates the tendency of such extension without operation. This may be taken to prove that such extension is very apt to occur at all events. Such being the case it would seem that attempt by such treatment to rid the uterus of the disease and its distressing symptoms is advisable. Surely if it is allowed to remain unmolested the statistics show that tubal extenion may be expected. In those cases in which the appendages have been removed, and in which such symptoms as menorrhagia, profuse leucorrhea and pelvic pain indicate activity of the Neisser coccus in the uterus, at least such treatment of the interior of it as already mentioned, is strongly indicated. It is here that caustics have been largely used. Even obliteration of the cavity by atmocausis is recommended. Whenever I have believed the myometrium has been involved, and particularly if uterine adhesions were present, I have preferred vaginal hysterectomy as being surer in results and as being but little more dangerous. With the employment of agents for obliteration of the cavity one cannot feel confident of success. Certainly there is great danger of leaving islands of crippled mucosa that will be very apt to give trouble afterward.

CHOICE OF OPERATION.—We have already alluded to vaginal incision and drainage of pelvic abscess in acute gonorrhea, where it is usually of but temporary benefit. In the chronic variety of the disease we aim by the aid of surgery to rid the patient, as far as possible, of the evil structural results and consequent symptomatology. Some gynecologists have modified this plan so much from their great regard for the function of the uterus and appendages, that strong advocacy of the so-called conservative plan of operating has been made by A. Palmer Dudley and others. They report saving appendages that seemed hopeless and of having such operations followed by pregnancy. No doubt exists in my mind that while such pleasing results may follow these conservative operations, in the large majority of cases following them we note sterility, uterine hemorrhages, menorrhagia, pelvic pain, and recurrence of infection. If pregnancy follow it is liable to be ectopic, or terminate in abortion and evidence of a markedly sharp puerperal infection. If the husband has latent gonorrhea, an affection so common, then we must expect at any time reinfection of the tubes and ovaries. And, again, acute exacerbations may and do frequently occur so long as gonorrheal tubes and ovaries, or even the intrauterine form of the disease, remain.

Then, I take it, all are agreed that some form of surgical procedure is necessary when the uterine appendages are the site of chronic gonorrheal infection. The route for the operation must now confront us. The vaginal route should be chosen in the majority of cases. It has several advantages, particularly if the uterus is to be sacrificed. If, however, the vagina is very narrow I would prefer the abdominal route to perineal incision to increase the working space. I admit that, as a rule, the abdominal route offers greater facilities for the operator but, for the patient, I think usually the vaginal route is to be preferred. Even the cervix may easily be left *in situ* when operating through the vagina, if that, instead of vaginal hysterectomy, has been planned. Allowing the cervix to remain leaves a better vaginal roof than we can expect in vaginal hysterectomy, but should it be degenerated or deeply lacerated or otherwise pathologic, or the patient have an hereditary history of carcinoma, it had better be removed. In all these vaginal operations on gonorrheal tubes and ovaries, cul-de-sac drainage is advantageous. Whether tube or gauze is to be used

for this purpose depends upon the amount of exudate present and whether or not eradication is done. For large exudates the gauze is preferable, and if I did not have such prejudice against its odor and such fear of its toxic properties I would employ iodoform in the gauze.

Three very important points now present themselves for consideration. The first is, should the ovaries be removed with the tubes? This entirely depends upon their pathologic condition and the age of the patient. If they are in good condition and not firmly adherent, then neither the nature of the infection nor the degree of it in the Fallopian tubes, should be regarded as indications for extirpation of the ovaries. If the woman is past the age of forty years they should be removed.

The second important point is, should one tube be left when the other is sacrificed? With gonorrheal pyosalpinx, and particularly if the endometrium is evidently involved, the other tube, though apparently healthy, should be removed. This plan is indicated by the fact of gonorrhea always attacking both tubes.

The third point is, should the uterus be removed with the tubes or tubes and ovaries? My answer is that in view of the probability of the affection lurking in the uterine muscle, or of marked symptoms resulting from multiple adhesions to this organ, removal of the body of this organ is advisable.

Even when the operation has been done by the abdominal route cul-de-sac drainage is advisable.

CONCLUSIONS:—

1. Earnest effort should be made to cure acute gonorrhea in women before it has entered the uterus.

2. With the exception of the accumulation of a large amount of pus in the cul-de-sac, non-surgical treatment is the best in acute gonorrheal tubal involvement.

3. In chronic gonorrheal pyosalpinx, ablation of the tubes is the best treatment.

4. The vaginal route, in most cases, is preferable to the abdominal route for this work.

5. The ovaries are not to be sacrificed unless they are hopelessly involved or the patient is more more than forty years of age.

6. Both tubes should always be removed.

7. The body of the uterus may be retained if not adherent or considerably involved.

8. Cul-de-sac drainage is advisable in both vaginal and abdominal ablations.

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THE SOCIOLOGICAL ASPECTS OF GONOCOCCUS INFECTION.*

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Recent advances made in our knowledge of the pathology of gonococcus infection have singularly amplified our conception of the character and sum total of its dangers to the race. Within the past twenty years no coccus has so grown in significance and pathogenetic importance as has the coccus of Neisser.

It is hardly necessary to spread before you the pathological balance sheet of gonococcus infection in order to emphasize its sociologic importance—to pass in review the number and variety of its local and systemic complications; to say that it causes 80 per cent. of all deaths from inflammatory diseases peculiar to women, practically all the pus tubes, more than 75 per cent. of the suppurative pelvic inflammations and 50 per cent. of all gynecological operations performed by surgeons—would be simply an iteration of facts which are generally accepted and rest upon reliable data.

The few remarks I shall make in connection with this phase of the subject will be directed chiefly to its important relations with conjugal productivity.

The distinctive peculiarity of gonococcus infection is that it primarily and specifically affects the organs of generation, damaging their structural integrity and impairing or destroying their functional capacity, and thus it becomes a most powerful factor of depopulation. While gonococcus infection has important sociological aspects from its effect upon the health and life of the individual, and the economic loss involved through the invalidism it occasions, its chief sociological significance centers in its effects upon the productive energy of the family. As the family is the fundamental unit of our social organization, whatever injuriously affects this unit reacts injuriously upon the social collectivity.

In this connection it may be said that venereology owes a great debt to gynecology for our knowledge of gonococcus infection in women. Even before the discovery of the gonococcus, Nœggerath, with a prescience which seems almost intuitive, had grasped the relation of effect and cause between the oft-occurring pelvic inflammations and sterility in married women, and the chronic gonorrheas of their husbands. Although carefully conducted investigations have enabled us to arrive at a more correct

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appreciation of the actual frequency of such relationships, many of the so-called vagaries of Nœggerath are among the accepted facts of science today. It is only since the development of modern gynecology, with its improved methods of exploration, that it became possible to correctly interpret many clinical phenomena connected with pelvic inflammations in women and identify the gonococcus as the pathogenetic factor.

It is generally conceded that no disease has such a destructive influence upon the procreative function of both sexes as gonorrhœa. About 50 per cent. of all sterility is due to this cause,—the husband may be rendered incapable of procreating or the wife of bearing children.

It is estimated that the husband is directly responsible for about 20 to 25 per cent. of this sterility through his own personal risks from the disease,—either from the blocking up of the seminiferous tubes or from changes in the character, motility and vitalizing qualities of the spermatozoa. In addition, as the husband though not sterile himself may, by reason of his gonorrhea, infect his wife, rendering her sterile, he is ultimately responsible for about 75 per cent. of all sterility in married life. Lier-Ascher found in 132 married couples when the husband was examined, 42, or 31.4 per cent. with azoospermia, 11, or 8.3 per cent., impotent, 41 had infected their wives with gonorrhea. Hence he concluded that the ultimate responsibility of the husband for sterility is 71.2 per cent.

Statistics as to the frequency, and import of epididymitis, of prostatitis and spermato-cystitis have been too often quoted to justify repetition here. It is generally conceded that almost all cases of epididymitis lead to a loss of function temporary or permanent, of the affected side; but many physicians are prone to overlook the fact that a unilateral epididymitis often causes azoospermia. In these cases it is probable that a funiculitis of the apparently non-affected side escaped recognition. Simmonds, who made 1,000 post-mortem dissections of the testicular apparatus in males, has pointed out that the most insignificant pathological changes in the seminal ducts suffice to obstruct the passage of the testicular secretion.

To what extent gonorrheal inflammation of the seminal vesicles may act as a cause of sterility has not been determined. Neisser and others regard it as an important factor either from disintegrating changes in the spermatozoa, or the absence of the normal secretion upon which the motility and migration of the spermatozoa depend. Reference might be made to numerous other pathological conditions which damage the spermatozoa or render them functionally incapable.

There is considerable difference in the statistics as to the percentage of primary sterility in women caused by gonococcus infection. A most conservative estimate is that of Neisser, who agrees with Bumm that 30 per cent. of all cases of primary sterility in women is due to gonorrhea. The chief social danger of gonorrhea as a depopulating factor is however, the creation of secondary sterility, or as it has been expressively termed, "one-child sterility." Numerous statistics might be quoted, but the proportion directly due to gonorrhea is unknown and unknowable. The enormous percentage of marriages in which one child represents the total fecundity of the family justifies the conclusion that the sterility in many cases is not of choice, but of procreative capacity extinguished by gonorrhea.

Another social danger of gonococcus infection in married life comes from the infective risks which the mother conveys to her offspring, resulting in the terrible affliction of blindness. It may be fairly stated that from 20 to 30 per cent. of all blindness is caused by gonorrhea. In the institutions for the blind the percentage is much larger—40 per cent. in Paris, 30 to 50 per cent. in this country. In 1498 cases of blindness collected by Stephenson 60.17 per cent. were of gonorrheal origin. Even since the introduction of the Crédé method, in the city of Breslau as late as 1898, there were 25 cases of ophthalmia neonatorum to 1,000 births. Apart from its humanitarian aspect the socio-economic importance of this one factor, entailing in this country a cost of several millions of dollars for the maintenance of those blinded by gonorrhea, should not be overlooked.

Brief reference may be made to accidental infections in family life—usually from the gonorrhea of the parents. The significance of the vulvovaginitis in young girls has been very much accentuated by observations which show that in many cases it practically ruins the reproductive apparatus of its victim. The characteristic of gonococcus infection in children is to remain for a long time quiescent, apparently cured, and then develop insidiously, causing obscure pelvic symptoms, salpingitis, peritonitis, etc. It was long ago pointed out that many cases of undeveloped uteri, resulting in dysmenorrhea and sterility, may be due to gonorrheal infection in infancy.

Such are some of the undeniable and scientifically demonstrated dangers of gonococcus infection introduced into married life. Certainly no more

important sociological problem can engage our attention than the prophylaxis or cure of an infection which smites at the very root of nature's process for the perpetuation of life!

What I have to say here concerning general prophylaxis may be summarized in the following propositions:

No communicable disease which is spread in the ordinary relations of family and social life can be controlled without the cooperation of the public.

The first and most essential condition of any intelligent scheme of prophylaxis of communicable disease is the general dissemination of knowledge among the public as to its extent and its dangers both to the individual and to society.

The more the spread of an infectious disease is independent of environmental conditions, the more individual and especially the more voluntary the agency, the more necessary is this enlightenment.

The public cannot give an intelligent and efficient cooperation in the prophylaxis of venereal infection without knowledge of the laws of its contagion—not only the modes by which contagion is effected, but also the duration of the contagious activity. In other words, all real progress toward the prophylaxis of venereal infection must come through enlightenment of the public.

INTUSSUSCEPTION.*

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Modern surgical writings, it seems to me, have given scant attention to a condition which, on account of its frequency and extreme gravity, should be marked as one of the most alarming surgical conditions of childhood. And because it occurs very suddenly, and requires rapid and efficient surgical treatment, for the general practitioner it is a subject pregnant with vital interest, and for all of us it is a matter of great importance. Having these thoughts in mind, I have selected for this paper the subject of Intestinal Intussusception. I am led to do this because some recent cases have brought the subject very pertinently to my attention, and especially because this condition in children is quite as frequent, and equally as disastrous, if not speedily recognized and relieved, as appendicitis is.

A true intussusception is, as Treves says, "a prolapse or turning of one part of the wall of the bowel into the lumen of an immediately adjoining part." There is also a sort of false intussusception which occasionally occurs in the very act of dying. This is a short invagination, easily reduced; it may be multiple; and it is in a retrograde direction—that is to say, the invagination is from below upwards instead of, as is always the case in true intussusception, from above downwards.

The pathological condition is practically a slipping of a continuous tube within its own lumen. This produces a double acute flexion or, more properly, an acute flexion at two places. Each external and internal coat is in juxtaposition with its fellow coat—that is, the peritoneal coats are together, and the mucous are likewise in touch with one another. "In all forms of intussusception, except the ileo-colic, the invagination increases at the expense of the external layer only. The apex of the intussusception always remains the same" (Treves.) It is well to bear this fact carefully in mind, as it serves to suggest some of the later pathologic changes, and also to direct one's efforts at reducing the condition. Peritoneal surfaces adhere quickly when closely applied and kept in place under moderate pressure. Mucous membrane tends to ulcerate when bent at an acute angle and subjected to tremendous pressure and friction. The agglutination of the outer coats occurs scarcely quicker than ulceration of the mucous lining and gradual escape of the intestinal bacilli to the other walls of the intussusceptum; and as the bloodvessels, narrowed both by pressure and position, become clogged with microorganisms, thrombi form, and death of the intussusceptum follows rapidly. The double danger: first, impracticability of reduction on account of agglutination of the peritoneal coat; and second, ulceration, perforation and sloughing of the invagination, may develop rapidly. The condition is one calling for prompt surgical relief!

VARIETIES OF INTUSSUSCEPTION.

Four varieties of intussusception are commonly recognized, namely, (1) Ileo-cecal, (2) Enteric, (3) Colic, (4) Ileo-colic. Recently, the possibility of a fifth variety has also been mentioned, namely, (5) Appendico-cecal. Kelly, in his recent work on appendicitis, mentions three forms of appendico-cecal intussusception: (a) appendix carried along with the invaginated cecum; (b) appendix itself forms the apex of the intussusceptum; (c) inversion of the appendix itself, partial or complete, with or without inversion of the cecum. These appendico-cecal varieties are very rare.

The ileo-cecal (invagination of the ileum into the

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cecum) is the commonest form of intussusception. Treves says that out of 100 cases, 44 will be ileocecal. The enteric variety (invagination of a section of the small intestine into its own lumen) is the next most frequent, 30 cases out of every 100 belonging to this class. The colic (invagination of a segment of the colon into its own lumen) is third, numbering 18 cases out of every 100.

The ileo-colic form includes rare cases of invagination of the ileum into the cecum, in which, with the ileum as the apex, there is also a folding-in of the cecum with the ileum into the colon. These cases furnish the condition of chronic intussusception, which may be very extensive. The third case which I shall here report was one of this kind. Mikulicz published a similar case. The invagination may extend so far that it can be felt by a finger passed into the rectum. Thus, in my case, as well as in that of Mikulicz, the invagination was so extensive that the intussusception could easily be felt in the rectum. These cases are found in the proportion of 8 in every 100.

FREQUENCY. In regard to the absolute frequency of intussusception, the *American Text-Book of Surgery* states: "It is estimated that 30 per cent. of all forms of intestinal obstruction, exclusive of hernia and congenital malformation, are cases of invagination." This is probably very near the truth.

ETIOLOGY. *Predisposing causes*: (1) Age. It is universally known that children are especially liable to intussusception. There are many theories to account for this; but I think they may be all summed up in the statement that invagination of the bowels is apt to occur in childhood because during the period of rapid growth the intestinal walls are thinner and laxer, and less well supported by the mesenteries than they are in adult life. It is said that 72 per cent. of the cases are males, and 28 per cent. females. Heusner is quoted as saying (*American Text-Book of Surgery*) that three-fourths of all cases of intestinal obstruction in children are intussusceptions. Dr. A. Jacobi says that 25 per cent. of all the cases of invagination or intussusception occur in the first half year of life (two-thirds of these between the fourth and sixth months,) and 53 per cent. of the cases occur before the end of the first year of life. The *American Text-Book of Surgery* states that in more than 50 per cent. of cases the patients are under 10 years of age. I think that the latter statement is misleading, and may direct young practitioners to the formation of wrong conclusions. It would be better to say that more than 50 per cent. of the patients are under six years of age. In diagnosing these cases the age of the patient must sometimes aid us in coming to a correct conclusion.

Other predisposing causes are: (2) Intestinal indigestion. Bottle-fed children are therefore more liable than breast-fed infants. (3) Improper feeding. (4) Especially long mesentery. (5) Malformations.

Determining Causes: (1) Constipation. (2) Subacute enteritis. (3) Small foreign bodies in the intestines. (4) Bad positions of the child, as for instance, carrying it about a great deal in the arms, and sitting it up in constrained and, for its age, unnatural positions.

SYMPTOMS. Manifestations of acute intussusception come on very suddenly, and without any premonition. They are: (1), Sudden spasmodic pain, occasionally accompanied or followed by symptoms of collapse or great weakness. (2). Usually at first there is diarrhea or frequent passages from the bowels. At first the evacuations are feculent, then loose and inclined to be watery, then mucoid and frequently tinged with blood. Bloody, glairy, mucoid passages following sudden, violent, crampy pains in the abdomen of a young male child, are very significant—almost pathognomonic. (3). Tenesmus, persistent and very urgent. Sometimes prolapse of the rectum occurs. (4). Absence of fever in the early stages. (5). Distended abdomen, with no especially sensitive areas in the early stages, and in the intervals of pain no spasm of the abdominal muscles. (6). A very characteristic symptom is the intermittency of the pains, etc., after the first hour. There are intervals in which the child appears to be almost, or quite, well. It will return to its play, and ask for something to eat; but in a short time it will again have a paroxysm of pain and tenesmus; and if it has eaten anything, it will probably vomit. (7). Sometimes a tumor may be felt; but in the earlier stages this is not by any means a constant, or even frequent sign. Later it may usually be felt. (8). Later symptoms are those of intestinal obstruction, viz., persistent vomiting; abdominal distension, constipation; abdominal pains; spasm of the abdominal muscles; insatiable thirst; weak, rapid pulse; pale, pinched face; emaciation, and usually some fever. (9). Leucocytosis is usually present after complete stasis of the bowels occurs; but it is not nearly so marked as in suppurative conditions.

DIAGNOSIS. Frequently the symptoms are so clear and characteristic that no difficulty is experienced in coming to the proper conclusion in a case. Occasionally the symp-

toms are less well marked; or perhaps the anxiety of the mother so befogs her perceptive faculties that she fails to notice some important symptom, and her account may mislead the physician if he is called, as it not infrequently happens, on the second or third day of the "attack."

The two conditions which perhaps will most frequently have to be excluded before one feels sure of a diagnosis of intussusception are, volvulus, and appendicitis. Differentiation from volvulus will present special difficulty. If the child be closely observed for a few hours, I think that the bloody mucoid stools and the tenesmus will show conclusively the nature of the disease in a case of intussusception; the absence of these characteristic signs will make the diagnosis uncertain. A tumor may occasionally be felt in both conditions; the tumor of invagination being usually sausage-shaped, larger than that of volvulus, and apt to be in the right iliac region. It must be remembered, too, that volvulus is very rare in young children. As the treatment is identical, however, and equally urgent in either case, absolute differentiation is not necessary.

Differential diagnosis between appendicitis and intussusception is also not always easy, as my second case reported below will show. Appendicitis is not as common in very young children, as intussusception is, and as a rule its onset is not so violent. The pain becomes progressively worse in appendicitis, and the paroxysms in the early stages do not last as long as those in the early stages of intussusception. Vomiting usually comes on earlier in appendicitis. Fever also usually occurs much earlier and is very much higher than in intussusception. General abdominal distension and obstinate constipation likewise come on much earlier in appendicitis. Bloody stools are absent in appendicitis, and the intervals of pain so characteristic of intussusception, do not occur in appendicitis. The tumor in appendicitis is much more sensitive to the touch, is usually of a different shape, and is much more fixed than that of intussusception. The leucocytosis in appendicitis is very much higher than in intussusception; and septicemic conditions develop much earlier in appendicitis.

PROGNOSIS.

Bayard Holmes says, in his recent work on *Surgery of the Abdomen:* "The prognosis in intussusception in the very young is so unfavorable that it may be declared an absolutely fatal disease." I would not go so far as that; but undoubtedly intussusception should be regarded as the most serious of all abdominal diseases in children. I feel confident that I have seen a few cases recover, if not spontaneously, certainly without operation. These cases are rare, however, and are not mentioned to invalidate nor to lessen the force of the statement of the absolute necessity for early operative intervention in a case not relieved otherwise in a very few hours.

TREATMENT.

The only sure and safe treatment for an intussusception is an operation. I have relieved a few cases by high injections of water; two cases I have relieved by deep abdominal massage; and I have seen one or two cases relieved spontaneously, after days of suffering, by sloughing of the intussusceptum, and its passage from the bowels. These results, as I have said, are very rare. I believe, however, that if the child is seen very soon after the attack has begun, and an ileo-cecal or colic intussusception is recognized, one should try full, deep enemas (given with the child lying on its abdomen, across the knees of the person giving the enema), combined with massage and gentle manipulation of the tumor. But if the intussusception be of the enteric variety, the enemas will do no good. Manipulation and massage may possibly relieve the invagination. Nowadays, these efforts at reduction should be continued but a very short time, *not over four hours.* I think that all gases which may be forced into the intestine with sufficient pressure to serve any useful purpose in reducing the invagination are, *on account of this pressure,* dangerous, and should rarely be used. Opium or morphin must frequently be employed to relieve pain; but they should be used only after one has made up his mind as to the condition, and fully determined on his line of procedure. Else, the early and important symptoms of obstruction may be so masked by the effect of the drug that one may be beguiled into a false feeling of security, and be made to believe that the invagination has been relieved. Morphin undoubtedly assists the enemas and manipulations by its relaxant effect, quiets the child, and procures a little rest after the manipulations, etc., and for this purpose it is most valuable. The special effects of belladonna or atropin, and of eserin salicylate, in causing relaxation of the intestines I must confess I have been unable to verify. I have very little confidence in them, and certainly would not recommend them even as hopeful adjuvants in the treatment of intussusception.

An operation is demanded in all cases of intussusception which have resisted the preliminary effort of colic injections and manipulations, and have continued as long as four hours. I must say that four hours is simply an arbitrary time-limit of my own. I have found that non-operative treatment

succeeds after two or three efforts, or not at all; and every hour usually adds to the extent of the invagination, for the violent peristalsis is apt to drive more and more of the intestine into the intussuscipiens. The adhesions between the peritoneal coats will have begun, the abrasion of the mucous lining will have occurred, and ulceration will soon follow. The constriction of the intussuscipiens will have caused greater and greater edema in the intussusceptum, and stasis of the blood current of this section will not be long delayed. An operation, if it is to prove a very simple procedure, almost devoid of danger, must be done before serious inflammatory changes have started in the invagination. Every consideration demands, therefore, an early operation. No great changes, as a rule, occur in four hours in these cases; but they are established very soon after this—hence my recommendation not to wait longer than four hours.

OPERATION. The surgeon should be prepared, when performing an operation for intussusception, to meet any of the abdominal operative exigencies. He may have to exsect a portion of gut, do an anastomosis, or remove sloughing masses of various sizes and extent, and restore continuity to the intestines, or control hemorrhage; and he must do all this expeditiously and carefully, and in a way to prevent infection of the abdominal cavity. Young children do not stand well long abdominal operations, nor the loss of much blood. Careful asepsis should be observed in everything, and at every point, both in preparing for, and in performing the operation.

I prefer the lateral median incision in ileo-cecal hernia. I mean by this the incision through the rectus muscle to the right of the median line; but the placing of the abdominal incision is a matter of experience or judgment in each individual case. As soon as the abdomen is opened, if the location of the intussusception has not been determined, the ileo-cecal junction should be first investigated. The majority of the invaginations will be found there. An ileo-cecal or a colic invagination may also be determined by the hand or fingers searching about the cecum or lower colon. If nothing is felt here, a careful investigation of the small intestine in the umbilical region should then be made. Failing to find the intussusception by these explorations, the small intestine must then be carefully withdrawn, coil by coil, from the abdomen, received in warm, moist, aseptic towels, and its whole extent inspected. Sometimes reduction is obtained by the manipulation necessary to catch up and bring outside of the abdomen, a coil of intestine; but inspection is important even then to establish the condition of the portion of the gut which was invaginated, to determine whether it has been injured too much to allow it to remain, or not.

When the intussusception is found the next thing is to reduce it as rapidly as possible without further injury to the gut. Treves suggested the method which I have found exceedingly useful and effective, namely, the "milking method." This means grasping the invaginated portion of the intestine at its upper part, and then systematically and gradually squeezing or compressing the swollen area in a manner similar to that employed in squeezing the udder of a cow in milking it. While this is being done with one hand, the other holds the last part of the intussusception and very, very gently draws upon it. Traction must be done exceedingly gently, and with but very little force. Traction alone, as a means of reducing the invagination, is ineffective, and may be very harmful. It is surprising with what ease and facility the milking method reduces or expresses the invaginated portion.

In case strong adhesions have formed, and the invagination will not yield, exsection must be employed. One must judge by the individual local conditions whether a complete resection of the whole area involved shall be done, or whether it is best simply to split the intussuscipiens and remove the intussusceptum, and then anastomose, either end-to-end or laterally. If the case is one of long standing, and the length of intestine involved is not great, then a complete exsection of the area involved is probably best, as the walls of the gut are apt to be diseased and will not bear suturing well. If the invagination is an extensive one, and it is impossible to reduce it at all, it will probably be best to follow Mikulicz' example, doing as he did in a case of very large and extensive ileo-colic intussusception: slit the intussuscipiens and resect the intussusceptum. This may also be done by incising the intussuscipiens below at the entering angle or apex of the intussusceptum; grasp the apex with a pair of strong forceps, push it upwards, and then withdraw it through another slit above, after sewing together its upper connection with the intussuscipiens; then suture the slits in the sides of the intussuscipiens. Or the extraction of the intussusceptum may be done in the opposite direction: namely, from below—this is probably the best way. First suture carefully the entering intussusceptum to the upper run of the intussuscipiens; then make a lateral slit a little below this point, grasp the invaginated gut with the blades of a rubber-covered compression forceps transversely just below its entrance,

then place another and crushing forceps without rubber also transversely across the intussusceptum a little further below, cut through the gut (that is, the intussusceptum), between the forceps; then make a slit a little below the apex of the intussusceptum, in the walls of the healthy gut, and draw out the intussusceptum, by gradual traction from below. The milking method of expressing and gentle pressure, with the forceps attached above, will materially assist the exit of the intussusceptum. This method follows the course of natural peristalsis, and the extraction of the cut-off fragment of gut is easier. The mesentery must be as carefully sutured, and its blood supply preserved as sedulously as in the cases of ordinary exsection of the intestines.

CHRONIC INTUSSUSCEPTION

Chronic cases are very difficult to diagnose. Treves says: "Most of the recorded cases were never diagnosed during life or before operation." He also says that these cases are "most common during active, adult life." I doubt this; but I have found them very difficult, indeed, to diagnose in the earlier stages. In the chronic cases of very extensive invagination of the ileo-colic kind, which extend into the rectum, when the intussusception is hopelessly injured and is sloughing, and one determines on an exsection, after suturing the intussusceptum and the intussuscipiens above, as indicated, the sloughing gut may be withdrawn through the rectum and anus, *if it can be reached from the anus.* An assistant should do this while the operator steadies the intestine above and assists the descent by gentle expression or "milking."

As I have said before, the ileo-cecal and the enteric are the acute forms of intussusception, and these require immediate operation; or else death will almost surely and immediately follow when the four hour limit has passed without reduction. The colic and ileo-colic varieties are usually much less acute in their manifestation; while delay is not to be advocated, these cases may go on for some time without causing death; and even after days, and sometimes weeks, an operation may save the life of the patient. These delayed operations nearly always necessitate exsection or exclusion of some portion of the intestine.

Many surgeons have warned against the danger of a recurrence of the intussusception after its operative reduction, and several procedures are suggested, to be used when a case is operated upon, in order to prevent this. One of these methods is to shorten the mesentery. This seems to threaten a greater danger than the possibility of a recurrence of the intussusception; for the plaiting or folding in of the mesentery thus recommended may lead to constriction of the bloodvessels, and this, in turn, may cause gangrene of a portion of the intestine and of the folded mesentery. A more surgical procedure would be a shortening and thickening of the intestinal coil at the seat of greatest danger—namely, the lower iliac section. This may be done by slitting the intestine longitudinally, and then bringing the two extremities of the incision together and suturing the opening transversely, as in Mikulicz' pyloroplasty. It seems to me, however, that all of these measures are inadequate, if they are necessary, because, when an intussusception occurs, there is probably a laxity of the whole small intestine; and it is quite impracticable to fold up the whole mesentery, or to make a sufficient number of transverse slits and suturings to control the whole intestinal tract.

It is impossible to keep track of all the cases of intussusception one sees, especially in hospital practice—but I have never known a recurrence in any case. I believe, however, that the operated cases especially, are, to an extent, protected from a recurrence by the thickening and stiffening of the gut which result from the traumatism of the invagination, efforts at reduction, and the handling during operation. I think that any set mechanical procedure for preventing a recurrence of an intussusception is unnecessary; and it may do far more harm than another intussusception.

AFTER-TREATMENT.

The after-treatment of operated cases is identical with that of any simple abdominal operation. There is usually paralysis of the section of bowel which has been invaginated, for a short time at least. One must be careful about giving purgatives. The bowels should be opened by enemas. If fecal vomiting has occurred it will be well to wash out the stomach thoroughly with a weak saline solution. If a pint of the fluid be left in the stomach after careful washing, it will markedly relieve the intolerable thirst that is apt to follow the operation, and also assist in reestablishing the functions of the bowels.

CASES.

The following cases illustrate three types of intussusception, and are interesting in themselves. I relate them as indications that, first, acute cases of ileo-cecal intussusception may be saved sometimes by a late operation; second, that some cases of intussuception may be mistaken for acute appendicitis; and, third, that invagination of the intestines may be of long standing, and tends always to increase.

Case I. A girl, 2 years old. Was a bottle-fed baby. Had had much trouble from indigestion.

Had never been very strong or robust; but recently her digestion had been apparently good, and her health had been good. I saw her first at night in consultation with Dr. Hornbeck of Catasauqua. The history was that in the absence of the family physician, three days before, she was suddenly seized by violent abdominal pains, frequent desire to defecate, and much straining and tenesmus. At first the passages were fecal, then they were strings of mucus tinged with blood. She had intervals, apparently, of complete absence of pain, in which she seemed tired, but pretty well. During these intervals she would play with her toys, and ask for something to eat. After three days of treatment by enemas, mild laxatives, and various stomachics, she developed signs of complete obstruction of the bowels. She had obstinate constipation; distended abdomen; frequent vomiting, towards the last of a feculent character; almost persistent pain in the abdomen; rapid, weak pulse; and signs of general and very marked weakness. It was the fourth day when I saw her first. I found a very pale, emaciated, weak, suffering baby, with pulse 130 and temperature 101°. She was vomiting about every half hour. She was exceedingly thirsty. The abdomen was distended, but without any very tender spot; and the muscles seemed equally spasmodic on both sides of the belly. There was general tympany. No distinct tumor could be felt; but there was some tenderness and thickening in the right iliac region. On account of the impracticability of properly preparing for the operation at a private house at that time of night, I decided to remain and watch the patient, postponing the operation until the next morning. Accordingly, I telephoned my assistant to prepare everything, and to come early in the morning. By the use of some strychnia and morphia, and small injections of saline solution into the colon, the child's condition was actually a little improved during the night. Her pulse was better, and she looked better.

We operated early in the morning. A median incision was made. As soon as the abdomen was opened I passed my hand into the right iliac fossa and explored the ilio-cecal region. I at once found the characteristic sausage-shaped tumor at the ilio-cecal valve, denoting an intussusception. I grasped the tumor to steady it while my assistant turned the child, in order to get the coils of the intestine out of the way. I made gentle milking motions, and almost immediately the invagination was reduced. Inspection showed a very much thickened and inflamed section of the ileum about six inches long; the peritoneal coat was very much roughened; and the color of the intestine was somewhat doubtful. I found, however, that the mesentery, except for one laceration or erosion at its lower border, was in pretty good condition; and its vessels seemed quite patulous, and not seriously injured. I decided not to exsect the injured gut. The torn border of the mesentery was sutured, the peritoneal coat of the injured area was bathed with hot saline solution, dried, sprinkled with aristol, and replaced; and the abdomen was rapidly closed. The child made a rapid and uninterrupted recovery, and has been quite well ever since.

This case illustrates the fact that the most common form of intussusception, the ileo-cecal, does not produce complete intestinal obstruction at first, and that the constriction at the ilio-cecal valve is not always sufficient to produce gangrene of the ileum. The cecum itself is so roomy that unless a large coil of the ileum enters, the constriction would be only at the valve, and in the ileum itself where it is folded in. In a few cases this may be endured for several days, and operation should not be denied even at a late day. One is forced to do a rapid operation, however, and cannot be as careful and thorough as he would be were the condition of the little patient still good.

Case II. A boy, 4 years old. Was brought to St. Luke's Hospital, where the following history was obtained: The child had been perfectly well up to two weeks before admission. He was seized suddenly with violent pain in his right iliac region; he vomited, and had fever. After the initial attack, which lasted, as well as we could find out, only a few hours, he was not confined to bed. In two days he seemed pretty well again, though he still had intermittent attacks of cramp-like pains in his abdomen. He continued in about the same condition for about a week; when he again had violent pains in the abdomen, vomited, and had fever. He also had diarrhea, and passed a good deal of mucus; but no blood was noted in his stools. The physician who attended him thought the child had appendicitis, and with that diagnosis he sent him to the hospital for operation.

On admission, the child was thin, pale, had an anxious expression, and apparently was suffering severely. His pains seemed to be persistent, and not in intermittent paroxysms. His temperature was 99.4°, pulse 100, and respirations 24. Examination showed no marked distension of the abdomen, nor any very tender spot. There was no marked spasm of the muscles. A hard, movable tumor could be felt to the right of, and a little below, the umbilicus. Its longest direction was transverse, and it seemed to reach from the spinal column into the right lumbar region. The tumor felt singularly hard, and was dull on percussion.

I was greatly puzzled as to the nature of the case, and could not account for the hard tumor located as this one was. As the symptoms were not pressing at the time, I decided to postpone operation and keep the child for a while under observation; but to operate as soon as any bad symptom should occur. He was given a succession of enemas. His bowels were reported to have moved fairly well, and he did not vomit at all. He had occasionally some crampy pains. His pulse rate began to run up without rise of temperature; so I decided to operate two days after he entered the hospital.

The right rectus incision was used. A curious condition was revealed. The tumor seemed almost a

completely solid mass, and was found to be an invagination of the ileum into the colon; and such close and strong union had taken place between the intussusceptum and the intussuscipiens that the lumen of both guts was almost solidly occluded. It was astonishing that anything, even gas, could get through such a solid-feeling mass. The colon had taken a curious curve inward and upward, so that the cecum and the ileum were up in the umbilical and lower epigastric region, and the cecum was very strongly adherent to the peritoneum and cellular tissue over the third section of the duodenum. This union was so dense that it seemed quite impracticable to separate the cecum without a tedious dissection, which might involve the duodenum and pancreas. I decided, therefore, to make an anastomosis between the ileum and the transverse colon, thus excluding the cecum and ascending colon from the intestinal circuit. I did this because otherwise it would have been necessary to exsect the cecum and a section of the ileum; this would have required a long time, and, as I have said, would possibly have involved the duodenum and pancreas. The child made a rapid and complete recovery.

This case is very interesting. It exhibits: First, the extraordinary tolerance of a child of an almost impassible condition of his intestinal tract. Second, the fact that very small channels in intestines will serve to pass feces and gas if no serious peritoneal inflammation occurs. Third, that an invagination of the small into the large gut may result in dense union without sloughing of the intussusceptum, and that the swelling of the intussusceptum may not be sufficient to produce complete occlusion. Fourth, that long and continued peristaltic efforts and contractions of the abdominal muscles may force the cecum up to, and inflammatory adhesions may hold it firmly at, the ligament of Treitz and on the duodenum. In this case I thought at first that it might be an undescended or fetal cecum with a short or undeveloped colon; but it was not so. The colon was of normal length; but was curved upward and inward, and attached as I have indicated.

Case III. A boy, aged 9 years. He had been ailing for about one year. His parents stated that about one year before his admission to the hospital he had some enteric trouble. He was sick for about two weeks, and then seemed to recover entirely. On November 19th, about five months before his admission to the hospital, he was struck on the abdomen by another boy. Two days later he had severe abdominal pains. After this he had, in addition to his spasmodic abdominal pain, frequent bowel movements. He passed a quantity of shreds and bloody mucus. He was confined to bed for eight weeks; and then he was up and about for three weeks, though he still had abdominal pain of an intermittent kind, and his bowels were costive, though not alarmingly so. After this he had again violent attacks of crampy pains in the abdomen, frequent desire to defecate, and intolerable tenesmus. He passed only foul smelling, dark colored fluid, which contained a sediment looking like black sand. I saw him first in consultation about this time—about two months before he came to the hospital, and nearly three months after the beginning of the attack. The boy was thin, but not emaciated; he vomited rarely; his pulse was good, and his temperature varied from 99°-101°. At that time he had spasmodic pains about every half hour, which were not excessively severe, and exceedingly trying tenesmus; and he passed frequently a small quantity of extremely offensive fluid. Very careful and prolonged examination of his abdomen failed to reveal any tumor or marked thickening. There was no spasm of the abdominal muscles, and no special tenderness anywhere. Rectal examination was quite negative.

I gave as my opinion at this time that the boy had had an intussusception, and that the invaginated gut had been reduced, or, most likely, had sloughed off. I suggested intestinal antiseptics and small hot saline colonic douches given very carefully. The child seemed to improve after this in every way; and he was able to be up and about, though he was always ailing more or less. A few days before his admission to the hospital, he was again seized by violent pains, passed bloody mucus, and numerous stools of very offensive necrotic tissue. He vomited almost persistently, his abdomen became distended, and he fell into a very weak, septicemic condition.

He was admitted April 10th, nearly five months after the apparent beginning of his attack. Condition on admission: An emaciated, pale, excessively weak boy. Temperature 100°, pulse 128, and very weak. Distended and very sensitive abdominal walls. A large tumor felt, reaching almost transversely across the abdomen, from the right iliac, just below the umbilicus, to the left iliac region; and then apparently dipping down into the pelvis. Digital examination of the rectum showed a large mass projecting down as far as the lower part of the middle section of the rectum; and it seemed to block up the whole lumen of the rectum.

Although the condition of the boy was a desperate one his parents begged that an operation be done. Thinking that I might make a rapid enterostomy, or perhaps do an exsection and short circuit the intestinal tract, I consented to undertake it. I made a median incision. When the abdomen was opened there presented immediately a tremendous, sausage-like mass, which upon rapid investigation, was found to be made of the ileum invaginated into the colon; then the appendix, the cecum, the ascending and transverse colon invaginated into the descending colon and rectum. The color of the intussuscipiens, and the feel and smell of the mass showed nearly the whole intussusceptum to be necrotic. It was obviously impossible to save the child if this were left in. I had to exsect the necrotic mass at all events. In order to determine where the necrosis began and ended, I thought at first of slitting the whole intussuscipiens; but this was such a long area of large intestine that I was afraid of the

delay which inevitable hemorrhage would occasion, also of the sepsis which would follow the escape into the peritoneal cavity of the necrotic and foul fluids from the intestine. While rapidly casting about in my mind for a proper solution of the difficulty, I was feeling down into the right iliac region and along the invagination, and it occurred to me that it might be possible to reduce that part of the intestine which was not altogether necrosed and adherent. I tried the milking process; and to my astonishment and great relief, I very quickly reduced the invagination as far as the transverse colon; the walls of the descending colon were still in good condition. The transverse colon was ulcerated in many places, and towards the ileum the gut seemed quite necrotic. I rapidly clamped off the lower part of the transverse colon and the ileum; and after tying the mesenteries in sections, cut through and delivered the intervening mass of intestine, consisting of a part of the ileum, of the appendix, the cecum and colon, which were invaginated into the transverse colon. The ileum was anastomosed with the splenic flexure of the colon.

Considering his condition, the boy stood the operation remarkably well. He was, however, too weak to withstand the sepsis; and he died eight hours after the operation.

This is also an exceedingly interesting case, and it presents certain points well worth fixing in our minds. First, the age of the child, 9 years. This age, in my experience, brings a patient within the adult peculiarities and series of phenomena. This was an extreme case of chronic intussusception. Chronic intussusception belongs especially to adult life. Second, the long continuance of the case is remarkable. It is mere speculation, but it seems to me a rational explanation of the series of symptoms and physical changes to suppose the first attack to have been an appendicitis; the peristaltic efforts of the ileum to overcome the ileo-cecal valve paresis might have resulted in an intussusception; then gradually the appendix and cecum followed, and so on downward. I simply throw this out as a suggestion. Third, this case strikingly exhibits the fact that I have many times remarked: *a tumor may not be felt in the early stages of an intussusception.* Fourth, the amazing vitality of this boy, to have lived five months after the beginning of an intussusception. Fifth, the remarkable and very rare kind and extent of the intussusception.

It is often impossible to demonstrate the tubercle bacillus in alkaline urine, for the action of the ammoniacal urine upon the bacillus causes it to lose its affinity for the usual staining reagents. In such cases, therefore, the urine should be made acid before abandoning a search for the organism.

V. PLETH, Crookston, Minn.

BANDAGE FOR THE STUMP AFTER AMPUTATION THROUGH THE THIGH.

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The bandage here described is after the pattern of the triangular and quadrangular bandages used in the Medical Corps of the Army and Navy. Although perhaps the idea is not new, the writer has had such practical results from its use, that he has thought it worthy of attention.

Fig. 1.

The principle underlying the application of a bandage to an amputation stump, is that there shall be no pressure on the end of the stump and that it shall hold firmly in place.

The ordinary spica bandage, used in thigh amputations, usually becomes loose and has to be reapplied often. This is especially the case when an attempt has been made to avoid undue pressure. In two cases, one an amputation of the thigh for an arteriosclerotic condition, and the other an amputation after a knee-joint affection, the writer at first used the ordinary spica only to find that it became loose in the course of the day, allowing the dressings

to fall and the wounds to become exposed. Because of this, the following bandage was devised.

A square yard of muslin, cambric or linen is used. The center is marked off into another square by safety pins, this square being large enough to cover the stump and to leave a few inches to go up the sides of the limb. A two-inch roller bandage is wound tightly around the thigh just above the pins. This holds the lower portion of the square in place and at the same time relieves the pressure of the soft parts from the end of the bone.

It will be seen that if one yard of muslin is used, the diagonal will be 4.24 feet, which is sufficient to

Fig. 2.

go around the waist. Figure 1 shows the middle portion of the square applied over the dressing on the stump, with the roller bandage wound tightly to hold it in place, the ends A, B, C, D, hanging loose.

The end A is now allowed to drop down, while B goes around behind to meet the end D, the two being held together by a safety pin. The end A is then brought around behind and tucked in and pinned to the waist band thus made. (Figure II.) End C is left hanging. Finally this is brought behind the stump and pinned to the free margin. Figure III shows the bandage in its completed form.

This bandage was used on the thigh stumps mentioned, for some time, the result being far more satisfactory than that from the use of the ordinary

Fig. 3.

method. While the patients were in the hospital, it was never left on more than three days at a time, for the wounds had to be dressed. Finally one of the patients returned to the hospital, the bandage having remained in place six days.

Both patients were on Dr. Lilienthal's service at Mount Sinai Hospital. The photographs were taken by Mr. James Harney, of the X-Ray Department of the hospital.

GALLSTONES WITHOUT SYMPTOMS?

"It is a recognized fact that gallstones are frequently found in patients who have never complained of them. Indeed, it has been assumed that the frequent presence of gallstones, as demonstrated at autopsies, has shown that gallstones may exist for years without causing any symptoms whatsoever. This deduction is, in my opinion, not justified by the facts: I am convinced that gallstones do give rise to symptoms from the very fact of their presence in the gallbladder; that in the majority of cases they do not exist as inoffensive bodies." —MAURICE RICHARDSON in the *St. Louis Medical Review.*

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WALTER M. BRICKNER, M.D., Editor

NEW YORK, AUGUST, 1906.

THE SHIFTING BORDERLINE OF MEDICINE AND SURGERY.

It is almost platitudinous now to remark that the development of surgery has carried with it the transfer to its domain of several diseases formerly reckoned in the sphere of the internist. Appendicitis is indisputably a surgical disease and cholelithiasis is scarcely longer a battleground. Kocher's successes in the surgical treatment of exophthalmic goiter established partial thyroidectomy as a recognized mode of treatment. So often are the symptoms of chronic "dyspepsia" due to gall-stones, gastric or duodenal ulcer, malignant growths, pancreatic disease, chronic appendicitis, etc., that the medical man must also yield many of these cases to surgical treatment—or, at least, to surgical diagnosis.

Recent as has been the transfer of these diseases to the surgeon, the trend of laboratory study and of experimental medicine seems to indicate that it will not be long before some of these maladies, and others not in this category, will pass back across the borderline to the internist. It is especially in the direction of serum therapy that this change will probably take place. Antitoxin has robbed diphtheria of the throat of any surgical necessities (intubation, tracheotomy) in the majority of cases; and the established value of this and of tetanus and hydrophobia serum is sufficient basis for expecting similar results some day in the specific treatment of many other diseases, now largely surgical—including sepsis and the surgical complications of influenza and the exanthemata.

Very recently serum therapy has been giving apparently brilliant results in exophthalmic goiter, a disease that only a little less recently approached the borderline of medicine and surgery.

Developments in the studies of dietetics and of normal and disordered metabolism—less brilliant, perhaps, and still somewhat more uncertain than those in other departments of laboratory research—may remove chronic "dyspepsia" from the potentially surgical sphere to that of preventive medicine.

While we are seeking a specific for the prevention or cure of tuberculosis we are learning that climatotherapy may be as important in surgical as in medical forms of the disease. In another issue we called attention to Halsted's observations that hygienic and climatic treatment is not only essential as an adjunct in the management of tuberculosis of the skeletal system and the lymph glands, but that it may be actually curative—sometimes far better in its results than surgical extirpation.

Radical removal is the only treatment we have thus far for malignant growths. The occasional "spontaneous cure" or cure by suppuration or by deliberate bacteriotherapy (Coley) rather points the way to something better than marks important exceptions to the statement. Yet surgery promises little in these sad and sadly numerous cases. We have learned at least enough of the pathology of malignant growths to regard radical removal as but a rather illogical makeshift. A specific treatment, ardently being sought throughout the scientific world is, let us hope, not far off. Like the astronomer who predicates the existence of a star by purely mathematical computations, like the chemist who predicates an element before it is actually discovered, may we not predict, *à priori*, that as other diseases have yielded to specific antitoxins so must typhoid and meningitis and tuberculosis? With almost equal assurance may we not predict that malignant growths will some day yield to a specific treatment? Will it be by serum therapy? The reports of the immunization of mice against carcinoma, are current in the literature. Will it be by bacteriotherapy? Long-continued suppuration and erysipelas infections have caused regressions in neoplasms, evidently by the production of some antagonistic toxin. Will it be that a better knowledge of physiology and of embryonal forces will bring malignant growths into the enlarging domain of preventive medicine?

Surgical Suggestions.

In all cases of torticollis, examine for caries of the spine.

A mass in the right iliac region, associated with a pulmonary lesion, is very suggestive of ileo-cecal tuberculosis.

In ingrowing toenail, evulsion of the nail gives temporary relief, but it does not cure. When the nail grows out again the condition recurs, often in aggravated form.

Fracture of the outer end of the clavicle may follow a fall upon the shoulder. Unless one makes a careful examination such a fracture may escape observation or be mistaken for a dislocation of the outer end of the clavicle, with which condition, indeed, it may be associated.

Shortening of the shoulder, as measured from the sternal end of the clavicle to the acromion process, is significant of fracture of the clavicle.

Furunculosis vulvæ, even when it persists in spite of all other treatment, will usually yield to daily *scrubbing* with green soap and the application of a dressing of sublimate solution.

Cystic swellings at the external angle of the eye are usually dermoids. In some cases they communicate by a small opening with an intracranial sac.

Non-malignant tumors of the parotid practically never cause pressure effects on the facial nerve. This may be of importance in differentiating them from malignant tumors.

In cases of run-over by vehicles, if the wheels pass over the trunk from right to left the liver is the organ most commonly ruptured, whereas, if the wheels pass from left to right the spleen is more frequently injured.

In all cases of lumbago, especially of the chronic variety, examine the sacro-iliac joints for tenderness. Such cases may sometimes be almost instantaneously relieved by applying broad strips of plaster from beyond one superior iliac spine to the other, across the back. The straps must be applied tightly and with the feet close together.

Large, slowly growing, slightly movable abdominal tumors near the median line, causing few symptoms and not accompanied by signs of malignancy, are suggestive of mesenteric cysts.

Examination to determine the possible presence of cardiac disease or aneurism should always be made before passing a stomach tube. In the presence of such lesions the tube should not be employed except as a life-saving measure in an emergency.

If a patient dates irregular or persistent cough from a time when he thinks he "swallowed" or inspired a foreign body, the fact that the physical signs elicited upon examination of the chest are *peculiar*—different from those found in ordinary types of bronchitis—points strongly to the presence of a foreign body.

A slender fish bone lodged in a bronchus will usually not cast a shadow on the x-ray plate. In such a case bronchoscopy and auscultation are more reliable diagnostic measures. In addition to a variety of moist râles, one may hear, associated with the inspiratory or expiratory murmur, or both, a musical or vibratory note, when a bone or pin lies in a bronchus.

A satisfactory method of x-ray study of esophageal diverticula and strictures consists in fluoroscopy of the thorax while the patient is swallowing an emulsion of bismuth subnitrate. A skiagraph may be made immediately afterwards as a supplementary record.

By a careful study of an x-ray plate it can usually be determined with fair accuracy whether a renal calculus is in the pelvis, or in the parenchyma—at the upper pole or the lower pole.

When skiagraphing for suspected renal calculus the entire urinary tract should be exposed, *i.e.,* the kidney regions, ureters and bladder. Not infrequently a stone supposed to be in the kidney may be lodged in the lower end of the ureter, within reach from the bladder.

In *acute,* no less than in chronic osteomyelitis of the long bones, an x-ray picture is of immense service as a guide in the operation. It determines the exact location, extent and even character, of the disease focus, and thus it saves much unnecessary destruction of bone by the surgeon's chisel.

Book Reviews.

Aids to Surgical Diagnosis. By H. W. CARSON, F.R.C.S., Surgeon, Tottenham Hospital. 16mo; 140 pages. (*Students' Aids Series.*) London: BAILLIÈRE, TINDALL & COX. New York: WILLIAM WOOD & CO., 1906.

This is a modest little volume, disclaiming all pretensions to originality and to completeness. We find it, however, a very excellent compend, admirably condensing the essential data in the diagnosis of the commoner surgical affections. The chief diagnostic and differentiating signs and symptoms of each disorder are properly emphasized. Primarily intended for students, this little book may also serve practitioners as a ready pocket reference.

Le Rein Mobile *(Les Actualités Médicales).* Par FÉLIX LEGUEU, Professor agrégé à la Faculté de Médecine de Paris, etc. 18mo; 96 pages; pasteboard cover. Paris: J. B. BAILLIÈRE ET FILS, 1906.

The kidney lies in a fascial envelope which, however, is open below. Neither vessels nor peritoneum retain it in position, nothing but the numerous, fine trabeculæ of fibrous tissue which traverse the fatty capsule keeping the kidney in place. Normally this organ moves during respiration and when the fibrous trabeculæ weaken or stretch, the excursion increases and is limited by the vascular pedicle, which then gradually stretches also. Such changes as deep position of the cecum or kinking of the ureter are purely secondary. Movable kidney should be considered part of a general disease which affects the muscular, connective tissue and nervous structures of the body, manifesting itself in other troubles such as hernia, varices, eventration, enteroptosis. The condition may be acquired (frequent pregnancies) or congenital. Clinically, dull continuous pain, digestive disturbances and neurasthenic symptoms are noted. It is, however, necessary to prove that the kidney really causes the symptoms complained of. The author considers the numerous complications met with, among which hydronephrosis is the most important. Of supporters he approves most of the general abdominal belt without a pad. He decorticates the kidney and fixes the organ directly into the wound, using catgut. This little brochure is useful as giving a clear discussion of the subject in a common-sense way.

The Edinburgh Stereoscopic Atlas of Anatomy. Prepared under the Auspices of the Department of Anatomy of the University of Edinburgh by PROFESSOR J. R. CUNNINGHAM, M.D., D.S.C., LL.D., D.C.L. Edited by DAVID WATERSTON, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer and Senior Demonstrator in Anatomy, University of Edinburgh. In five sections, of fifty stereographs each, in cloth cases; with hand stereoscope. SECTION IV. PERINEUM: PELVIS; LUMBAR REGIONS; THORAX (BACK); UPPER LIMB. New York: IMPERIAL PUBLISHING CO., 1905, 1906. By subscription only. Price of atlas, complete, $50 net.

This section consists of fifty-one views, of which twenty-five are devoted to the upper limb and sixteen to the topographical anatomy of the male and female perineum and pelvis. The remaining ten views demonstrate the lumbar region of the body and the position of the viscera of the thorax and the abdomen as seen from behind. These last constitute an extremely interesting feature and their value is at once evident. The student rarely, if ever, learns the surface relations, and inter-relations, of viscera by dissections from the back, and his text-books of anatomy usually illustrate such relations only schematically. Of course, the schematic drawings have this virtue, that they indicate surface relations as they are supposed to be in the living, and they represent a normal average. The dissections in this atlas represent *cadaveric* relations in a *single* subject; but the accuracy of those relations in that subject cannot be questioned, and the stereoscopic effect teaches more, and more impressively, than can any sketch.

A Compend of Operative Gynecology. *Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital.* By WILLIAM SEAMAN BAINBRIDGE, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc.; compiled with additional notes in collaboration with HAROLD D. MEEKER, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc. 12mo; cloth; 76 pages. New York: THE GRAFTON PRESS, 1906. $1.00 net.

This booklet was published for the benefit of students taking a course in operative gynecology on the cadaver at the N. Y. Post-Graduate Medical School. A short but lucid description of all the common gynecological operations is given, and such operations as amputation of the breast, appendicectomy, herniotomy, skin-grafting, etc., are included. The text might have been made somewhat clearer by a few diagrammatic illustrations. The book will prove of use to teachers in surgery on the cadaver and to practitioners who want to "brush up for an operation" on short notice.

The Influence of the Mind on the Body. By DOCTOR PAUL DU BOIS, Professor in the University of Berne; Author of "The Psychic Treatment of Nervous Diseases." Translated from the Fifth French Edition by L. B. GALLATIN. 12mo; 63 pages. New York: FUNK & WAGNALLS CO., 1906. Cloth, 50 cents.

In our review last year of the same author's "Psychic Treatment of Nervous Disorders," we gave expression to our high esteem of the value of this book, and we ventured to predict that the author's views and methods would play an important rôle in the therapy of the future. Since that time the success of his work has been very striking. Cabot, in a recent article, goes so far as to say that Dubois' work is of an epoch making character.

The subject of the present volume is a lecture delivered by Prof. Dubois, in which the fundamental idea of his former volume is treated in an exhaustive and lucid manner. The style is brilliant and is illuminated by many interesting and keen observations. The author reveals himself both as a student of human nature and as a psychologist of the first order. We confess to an enjoyable hour in the perusal of this book.

The General Practitioner as a Specialist. *A Treatise Devoted to the Consideration of Medical Specialties.* By J. D. ALBRIGHT, M.D. Third Edition. Revised and enlarged. 8vo; 367 pages. Illustrated. Philadelphia: Published by the author. 1906.

This edition differs from the preceding in the introduction of illustrations and in the enlargement and revision of the text. As before, the book is chiefly devoted to the bloodless office treatment of rectal diseases, hernia and goiter (by injections); to the treatment of drug, alcohol and tobacco additions, and to the removal of cancer by chemical means. In all these sections various formulæ and modifications of method are supplied. Briefer sections deal with nasal catarrh, varicocele, pruritus ani, tapeworms, non-surgical gynecology, alopecia and other special subjects. Several pages are devoted to the exposure of various secret formulæ and quack systems; and the final chapter, written by T. W. Williams, M.D., discusses genito-urinary "specialties."

The Modern Materia Medica. *The Source, Chemical and Physical Properities, Therapeutic Action, Dosage, Antidotes and Incompatibles of all Additions to the Newer Materia Medica that are Likely to be Called for on Prescriptions.* Duodecimo; 306 pages. New York: THE DRUGGISTS' CIRCULAR. Cloth, $1.50.

The title-page sufficiently indicates the nature of this volume. Most, if not all, of the drugs listed are trade preparations. The number of these new synthetic products and mixtures is astonishingly large.

Progress in Surgery.

A Résumé of Recent Literature.

On Spontaneous Cure of Cancer. H. R. GAYLORD and G. H. A. CLOWES, Buffalo. *Surgery, Gynecology and Obstetrics*, June, 1906.

The authors report spontaneous cure of cancer in 23% of mice inoculated. The actual number of cures were 101. It was found that the chances of cure diminished with the increasing age and dimension reached by the tumor. Probably the chances of cure are increased the slower the growth of the tumor. Mice that recovered showed complete immunity to further inoculation for a considerable period of time, and the blood of such mice when added to tumor material, which was implanted into other mice, reduced the number of successful inoculations materially. Retrogressing tumors showed the same changes as are observed in tumors treated with the x-ray. A detailed description of some of the more interesting cases is given. Fourteen cases of spontaneous regression of malignant tumors in human beings have been collected from the literature—two epitheliomata, one scirrhus of the breast, one malignant adenoma of the rectum, seven cases of chorion carcinoma, one endothelioma and two sarcomata. Although retrogression in human beings is so rare, these cases speak in favor of immune forces, which should stimulate research for a potent serotherapeutic agent.

The Treatment of Gonorrheal Epididymitis with Passive Hyperemia (*Ueber Stauungsbehandlung der Epididymitis gonorrhoica*). W. KÖNIG, Bonn. *Medizinische Klinik*, No. 24, 1906.

The report includes the treatment of twelve cases of gonorrheal emididymitis. While the patient is in the recumbent position the affected half of the scrotum is pulled upward, thus putting the cord on the stretch. The spot at which the rubber tube is to be passed is protected with a layer of cotton and then covered with gauze. The tube should be drawn no tighter than is comfortable for the patient. In about one-half hour the pain will entirely disappear. The hyperemia is continued for 20-30 hours, the scrotum then kept elevated for 4-6 hours to permit the edema to disappear, and constriction is then reapplied. It was found that spontaneous pain rapidly disappeared, although pain on pressure continued. Absorption of the inflammatory products progressed rapidly to a certain stage, but later the hyperemia (passive) appears to have a retarding influence on absorptive processes. When this stage is reached active hyperemia (heat) is to be preferred. The results, on the whole, are very encouraging.

A Method of Anastomosis of the Vasa Deferentia. G. FRANK LYDSTON, Chicago. *Annals of Surgery; Chicago Medical Recorder*, July, 1906; *Journal of the American Medical Association*, July 21, 1906.

The cord is exposed by an incision about 2 inches in length. Its sheath is incised carefully and the edges caught with forceps. The vas is now carefully separated from the cord and its fascial envelopments. Both ends of the vas are now probed with a fine filiform bougie, to determine whether the lumen is patent for a resonable distance. The proximal portion of the duct is now bent at about a right angle and a fine sharp-pointed probe or long round needle passed through the wall of the vas, about 1¼ inches from the cut end. A straight strand of large size silkworm-gut is now passed into the proximal end of the vas and made to emerge at the opening made by the probe or needle. It is drawn through until about three inches of the silkworm-gut protrudes. The other end of the strand of gut is threaded into the distal portion of the vas and the two ends of the severed vas are brought together over this coupling.

A fine catgut stitch is now inserted in the vas at the line of the anastomosis and tied securely. A second stitch is placed directly opposite the first. These stitches are made unnecessary by the next step of the operation, but they make assurance doubly sure. The edge of the sheath of the cord is now stitched upon itself so as to wrap the vas in a distinct sheath. The opposite edge of the fascia is next stitched over the cord to the sheath just made for the vas. A continuous suture of fine catgut is used. The vas for about an inch or more beyond the line of union of the duct is thus enveloped in a snugly-fitting sheath that seals the ends of the tube and prevents them from slipping.

The free strand of silkworm-gut is passed through a small puncture in the skin just above the upper angle of the wound. The skin wound is sutured in the usual manner. On the tenth day the strand of silkworm-gut is withdrawn. A very fine whalebone filiform bougie or bronze wire may be used instead of silkworm-gut for coupling the vas.

Of four cases thus operated on, one patient has shown, microscopically, a restoration of function by the presence of spermatozoids in the urine, one is apparently a failure, and there has been no opportunity as yet to determine the condition in the other two.

[The article from which this is abstracted appeared, as noted above, simultaneously in the three representative journals mentioned. In two the article is identical in words; in all three it is identical in substance!]

In the *Journal of the A. M. A.*, Lydston describes the technic he follows in vasectomy and enters somewhat more in detail than he does in the other journals, into a discussion of the indications he sets up for vasectomy. He says it has a certain range of application in sexual neurasthenics and spermatophobiacs and in cases of genuine spermatorrhea. In intractable prostatitis and seminal vesiculitis it is of value and deserves a trial before the major operations. Recurrent epididymitis also furnishes an important field for this operation, and it has a certain range of application in suspected or known tuberculosis or malignant disease of the testes. In some cases of enlarged prostate with hemorrhages from the vesical neck, unsuitable for the radical operation, Lydston has succeeded in so improving the conditions by a preliminary vasectomy that a prostatectomy could be performed. In enlarged prostate when prostatectomy is disallowed or is inadvisable, vasectomy is indicated.

Some Observations on Prostatectomy. L. BOLTON BANGS, New York, *Medical Record*, June 23, 1906.

Bangs believes that prostatectomy is done altogether too frequently; the formula, "the patient has an enlargement of the prostate, therefore he must be operated upon," is upheld too zealously. The class of cases in which Bangs believes operations are unnecessary are not only mild cases with few symptoms, but also cases where contraction of the bladder is extreme, and where even if prostatectomy is performed local conditions will remain which are not alleviated by the removal of the prostate. The general condition of the patient must also be considered, the amount of care that he will be able to attain, the patient's accessibility to judicious medical advice, and whether or not catheter life is likely to fail.

Consideration and Treatment of the Accidents of Surgical Anesthesia, with Special Reference to Prevalent Drug Treatment. B. H. CASWELL, Boston, *Boston Medical and Surgical Journal*, June 28, 1906.

Caswell briefly reviews the physiology of the heart, and its relation to anesthesia, the physiology of shock and the action of various drugs which have been recommended to combat the accidents of surgical anesthesia and of shock. He makes a distinction between surgical collapse and shock and upholds Crile's well-known views on the latter subject. He concludes that all drugs are useless in shock with the exception of adrenalin. The sovereign remedy in the treatment of this condition is an intravenous infusion of salt solution with adrenalin chlorid added, sufficient to make a 1-200,000 solution. In surgical collapse, such drugs as strychnin and alcohol may be of benefit, but better than these are cold water to the face, ammonia fumes and arti-

ficial respiration. Salt solution is indicated if the collapse is due to loss of blood. In desperate cases rhythmic massage of the heart through the diaphragm, with the hand in the abdomen, should be tried. After all, the best method of treatment is prophylaxis, namely, the administration of as little anesthetic as possible.

Histology of Roentgenized Malignant Tissue. WILLIAM KRAUSS, Memphis. *Memphis Medical Monthly*, July, 1906.

Krauss reviews various explanations advanced for the action of x-rays upon animal tissues, and various descriptions of the cytological and histological changes they effect. Of some of these he says: ". . . in this array of described changes there is a sublime disregard of the accepted principles and nomenclature of regressive changes. It also goes without saying that the effects do not vary so much with the character of the tissue as with its depth from the surface. I may be permitted a little dogmatism, and say that there is no depth at which x-ray changes cannot be produced."

After studying sections made from a carcinomatous nodule recurrent after breast amputation, which nodule had perceptibly diminished in size under x-ray treatment, Krauss finds that: "It would seem from these sections that the Roentgen ray has in this case exhibited selective action only for those tissues which it is desirable to stimulate and preserve, whereas the malignant elements are only moderately damaged; yet there was subjective improvement, which seemed to justify further exposures."

He concludes, from observations in his cases: "Judging from the history of these cases, it would appear that the Roentgen ray *has no place in the treatment of real malignancy*, meaning that stage in the development of cancer when physiologic resistance is distinctly impaired, whereas surgery can frequently to some extent restore this important function. I make this statement in spite of several apparent cures in my hands. I believe the x-ray treatment of cancer should be limited to slowly growing superficial lesions *where cosmetic effect is of prime importance*, but even here it should be attempted only by an expert whose judgment and experience enable him to tell when he must surrender the case to a surgeon."

Pilo-Nidal Cysts and Sinuses. FLETCHER HODGES, Indianapolis. *Lancet-Clinic*, June 2, 1906.

By pilo-nido Hodges refers to the dimples, sinuses and cysts which not infrequently occur in the sacral-coccygeal region. They are congenital in origin and embryologically are usually ascribed to a persistence of the neural canal or other embryonic structures, or to an infolding of the integument. Their main characteristic is the presence of hair in the cyst or wall of the sinus. From uncleanliness on the part of the patient, or less frequently from trauma, these sinuses or cysts may suppurate and produce a chronic discharge. The only treatment is a thorough dissection.

An Improved Technic for Operating for the Removal of Hemorrhoids. L. S. PILCHER, Brooklyn, *Brooklyn Medical Journal*, June, 1900.

The sphincter is first divulsed. Then the mass to be removed is grasped by a ring forceps and pulled out so as to put the parts at its base well upon the stretch; a longitudinal incision through the mucous membrane and skin on either side of the cone thus drawn out is made, which passes out onto the skin so as to include as much of it as it may be necessary to remove in order to sufficiently retrench the redundant skin tissue.

Beginning with the apex of this triangular flap of the skin, it is dissected up from the deeper tissues to the base of the pile proper; then into the sulcus produced by this skin elevation and the lateral incisions, an ordinary pair of Kocher's hemostatic forceps is thrust so as to clamp the comparatively narrow pedicle of the tissue left. The portion of the pile that protrudes beyond the clamp is now cut off; then a ligature is applied by needle passing through a fold of the mucous membrane just beyond the point reached by the clamp. When this is tied, the main part of the blood supply of the parts below is cut off.

The long end of this ligature thread is then carried by the needle as a running suture around the mass in the grasp of the clamp, from within outward, until all of the tissue grasped by the clamp has been included. The clamp is then loosened and withdrawn, and the ligature drawn up tight.

By these maneuvers a complete excision of the pile and a definite and satisfactory closure of the wound by suture is accomplished.

Hemorrhoids Situated High in the Rectum as a Cause of Occult Intestinal Hemorrhage (*Ueber hoch gelegene Hämorrhoiden als Ursache von okkulten Darmblutungen*). E. E. GOLDMANN, Freiburg. *Zentralblatt für Chirurgie*, No. 26, 1906.

Since the employment of Otis' speculum for rectal examination numerous instances of varices high up in the ampulla of the rectum have been noted. The varices are found between 15-20 cm. above the anus, which may be entirely free from the hemorrhoids. The blood in the stools may be so intimately mixed with the feces as to escape cursory attention. To cure the condition the actual or electro-cautery, introduced through a speculum, should be employed to destroy the vascular growth. The author reports three cases.

The Clinical Diagnosis of Status Lymphaticus. L. A. CONNER, New York. *Medicine*, July, 1906.

The status lymphaticus deserves attention from its practical importance. Sudden anesthesia deaths, deaths after small traumata and antitoxin injections, during mild illnesses, without apparent cause, etc., may be due to the above mentioned condition. The persistence of the thymus gland and hyperplasia of lymphatic structures throughout the body are the most constant lesions. With these may be associated hypoplasia of the heart and main arteries, infantilism of the genital organs, rickets (recent or old), thyroid abnormalities, idiopathic epilepsy. The diagnosis can in many cases be made by examination of the accessible lymphatic structures—as superficial lymph nodes (often not enlarged), tonsils, adenoids, base of tongue, epiglottis, larynx and pyriform sinuses, the spleen and the thymus (thymic dulness should disappear about the 4th or 5th year). Hypoplasia of the vascular system is shown by the thinness of the arteries; often also there is an hypertrophied left ventricle, *without* suprasternal pulsation in young people. Evidence of rickets, infantilism (lack of pubic and axillary hair, infantile uterus, etc.), anomalies of the thyroid gland, may give additional confirmation. The blood changes have not as yet been thoroughly studied.

Dislocation of the Outer End of the Clavicle. C. L. SCUDDER, Boston. *Journal of the American Medical Association*, June 7, 1906.

Usually this dislocation is easily treated with pad and retention apparatus, but occasionally it is hard to reduce and causes marked deformity. Scudder reports two cases and also experiments on the cadaver, which, with other facts, seem to him to support the views of Poirier and Sheldon as to the lesions and treatment. The indications for operation in these cases are irreducibility and failure to maintain reduction. The former is due to the interposition of the torn capsule or the ruptured trapezius, the latter to the rupture of the coracoclavicular ligaments. In dislocation of only moderate degree Scudder would use only a retentive apparatus. When this does not suffice and in extreme cases, he would suture. Various methods of suturing have been employed: wire, silk and absorbable material, and different forms of pins. The placing of the suture is of some importance; to secure a firmer hold on the outer end of the clavicle a suture to make traction on the clavicle from below in the direction of the coracoacromial ligament will be most effective. The dorsal position relieves from the weight of the arm and hastens healing. In the cases reported the patients were kept for eight or ten days on the back.

Rupture of the Quadriceps Extensor Tendon. HOMER GAGE, Worcester, Mass. *St. Paul Medical Journal,* July, 1906.

This is a rather rare lesion. It occurs generally in men past 50 years of age, and peculiarly enough after very trifling injuries, such as slipping on the floor or ground. For this reason, it is generally held that some degenerative process in the muscle must act as a predisposing cause. The diagnosis can be easily made from the disability and the presence of a deep depression just above the patella. The results of mechanical treatment are, as a rule, unsatisfactory. The statistics that have thus far been gathered are overwhelmingly in favor of operative treatment and the author advises that this should always be resorted to, if possible. Gage reports three cases, two of which were operated upon. The results in the operative cases were excellent. In the unoperated case (which was one of double rupture) the Thomas splint was used, with a fair end-result.

Joint Manifestations in Hemophilia. E. W. RYERSON, Chicago. *Journal of the American Medical Association,* June 23, 1906.

The author points out the importance of the diagnosis of the cause in the joint complications of hemophilia. It is probable that many cases go unrecognized, as many bleeders have a disinclination to admit their disability, thus embarrassing the examiner. The possibility of hemophilia, therefore, should be kept in mind in doubtful joint affections. In the first stage aspiration of some of the fluid may be necessary, and the procedure is harmless if done with a very small needle and with all proper precautions. The principal conditions likely to cause confusion in this stage are acute synovitis and intermittent hydrops or hydrarthrosis. In the former there is usually a history of more severe injury, more local pain and tenderness and slower disappearance of the effusion. Intermittent hydrops is a very rare disease, characterized by intermittent mild joint effusions occurring without antecedent traumatism, and each attack followed by complete recovery. The various infectious arthritides are much more painful and persistent and attended with more constitutional disturbance; the antecedent disease also suggests the diagnosis. In the hemarthroses of the hemorrhagic diseases, such as purpura, etc., the accompanying petechiæ are indicative of the cause. In the second stage of hemophilic hemarthrosis, with its thickened capsule, limited motion and beginning flexion, tuberculosis is suggested, but the absence of true spasticity, of free fluid in the joint, and of local tenderness, together with the lack of pyrexia, helps to exclude that disease. Arthritis deformans is distinguished by its slow onset, multiple involvement of joints, and the presence of bony or cartilaginous exostoses. In the third stage the clinical picture may be exactly that of an old tuberculous joint, with complete ankylosis and without evidence of suppuration, and a complete history of the case may be required. Before operating on any old ankylosis in which hemophilia cannot be positively excluded, a test of the coagulability of the blood should be made. For treatment of the first stage, Ryerson advises aspiration with a fine needle, followed by injection of adrenalin solution and a bandage for six hours. Use of the joint and massage are advised if aspiration cannot be done. No fixation should be used after the first day. In the later stages, with a tendency to flexion, traction, followed by a splint or cast, is advised. Ankylosis in flexion might be corrected by forcible measures, but any cutting operation must be sedulously avoided.

A Study of Infections of the Knee-Joint and Their Treatment. D. P. ALLEN and E. ALDEN, Cleveland. *Surgery, Gynecology and Obstetrics,* July, 1906.

The paper is based on more than 80 cases embracing syphilitic, traumatic, gonococcic, strepto- and staphylococcic, pneumococcic and tuberculous infections, also some cases usually classed as "articular rheumatism." The cases of severe acute infection were treated by a transverse incision below the patella, severing the ligamentum patellæ and flapping up this bone. The flexed and widely opened joint is cleaned and thoroughly packed. As the treatment progresses the knee is brought more and more into extension until ankylosis in this position occurs. Four such cases are reported. Of the milder cases some were treated by puncture with evacuation of the fluid, irrigation with 1 to 40 carbolic acid solution and injection of an iodoform-glycerin emulsion. In cases suspected of tuberculosis, injection with iodoform emulsion was the rule. Where the diagnosis is doubtful free incision is often of advantage. Gonorrheal cases, which frequently cause permanent ankylosis, may respond to irrigation and iodoform injections. The so-called rheumatic infections probably are bacterial in origin. Where the joint changes are acute and marked, free incision and swabbing first with 95% phenol and then 95% alcohol is of value. The authors conclude that the knee joint, when infected or inflamed, is not a closed cavity that should be left alone. Aspiration, incision or injection may safely be practiced. Radical intervention affords early and positive diagnosis and efficient treatment. Ten cases are used to illustrate the article.

A Case of Recurrent Spontaneous Gangrene of the Index Finger: Successive Amputations of the Phalanges: Abatement of the Process after Excision of a Portion of the Radial Nerve and Stretching of the Median. E. A. CODMAN, Boston. *Boston Medical and Surgical Journal,* July 12, 1906.

In May a small ulcer appeared at the tip of the index finger in a girl æt. 16; this refused to heal and the first phalanx was amputated. The wound healed slowly but two months later another ulcer appeared in the stump and the second phalanx was amputated. In November a gangrenous spot appeared over the metacarpo-phalangeal joint on the dorsal aspect; this refused to heal and amputation at this joint was performed in March. Soon after, another gangrenous area appeared at the site of the scar. On the theory that the trouble had a neurotic basis, two inches of the radial nerve were excised in the middle of the forearm. This had little effect on the healing process, so about one month later the author resorted to stretching of the median nerve in the middle of the forearm. In two months the ulcer had entirely healed. In order to prevent recurrence hyperemia was applied according to the Cushing method. Six months later the girl was entirely well.

The Lower Extremity of the Ulna as a Factor in Colles' Fracture. P. M. TOTMAN, Syracuse, *Buffalo Medical Journal,* July, 1906.

Totman calls attention to an imperfectly recognized but frequently present lesion in Colles' fracture, namely, fracture of the styloid process with accompanying subluxation of the lower end of the ulna. The importance of this lesion lies in the fact that the growth of callus may interfere with the functions of the carpo-ulnar joint, or that a deformity may arise which is entirely out of the possibility of the surgeon to correct. This is of great medico-legal importance.

The Operative Treatment of Infantile Paralysis, with Especial Reference to Neuroplasty. K. TURNSTALL TAYLOR, Baltimore. *N. Y. Medical Journal,* July 7, 1906.

Taylor considers very briefly the various operations, tenotomy, myotomy, tendon transplantation, arthrodesis, astragalectomy, osteotomy, and nerve anastomosis. The results of tendon transplantations have not quite fulfilled expectations. On the other hand, the author regards the future of nerve transplantation as very promising. He reports two cases. The first was a double paralytic equinovarus in a child 2½ years old. The operation consisted in a division of the left external popliteal nerve at the bifurcation of the sciatic, and its implantation longitudinally in a slit in the internal popliteal nerve (silk suture). At the end of 92 days sensation had partly returned and there was a distinct gain in the power of the left leg and in the faradic response.

The second case was similar, except that the lesion was not bilateral. In this case the external popliteal was divided and transplanted centrally into a portion of the internal popliteal, end-to-end. At the end of 120 days, the child could slightly abduct and dorsally flex the foot and extend the toes. Experimentally it has been found that end-to-end suture gives better results as regards regeneration than implanation into slits, and the author believes that in the future he will employ that method.

Treatment of Empyema, with Especial Reference to Irrigation of the Pleural Cavity. P. v. EISENBERG, Morristown. *Pennsylvania Medical Journal*, June, 1906.

Eisenberg irrigates the pleural cavity in all cases, without any untoward results. He uses sterile water, salt solution, or weak boric acid (3 per cent.) solution heated to the temperature of the body. The only precaution necessary is that the irrigation be done in the recumbent position.

The Treatment of Acute Otitis Media Purulenta and Mastoiditis, by Means of Artificially Induced Hyperemia. S. J. KOPETSKY, New York. *Medical Record*, June 16, 1906.

Kopetsky has used this treatment in seven cases and is highly pleased with the results. The hyperemia is induced by a rubber band, one-half to one inch in thickness, applied around the neck until slight cyanosis results. It is kept in place twenty-two hours daily and left off for the other two. The hyperemia is aided by allowing the head of the patient to be below the level of the feet. A preliminary paracentesis is always done. All the patients were cured with one exception and the membrana tympani became normal in an average of five to six days. The author insists on the immediate withdrawal of the hyperemia, if the symptoms do not abate rapidly.

Differential Diagnosis Between Cerebellar Abscess and Purulent Inflammation of the Labyrinth. H. NEUMANN. *Archiv für Ohrenheilkunde*, Vol. 67, Nos. 2, 3.

The author calls attention to the fact that first of all in cerebellar abscess nystagmus is apt to occur, and may be directed either towards the diseased or the healthy side. It is characteristic as the disease advances for the nystagmus to increase in intensity, and to reach such a degree as is never witnessed in labyrinth trouble. Of especial importance are the following observations which have been made by Barany and by the author. In the early period of labyrinth disease, nystagmus is directed toward the diseased side and later on is very apt to disappear, and appear only when the eyes are directed toward the sound side. In cerebellar brain abscess the nystagmus is one directed early in the disease toward the sound side, which suddenly changes to one towards the diseased side. If one observes this occurrence he can with certainty diagnose cerebellar abscess. The author relates the histories of five cases demonstrating these facts, which occurred in the clinic of Prof. A. Politzer.

Preliminary Report of the Treatment of Idiopathic Epilepsy by Appendicostomy for Colonic Irrigation. E. LAPLACE, Philadelphia. *Journal of the American Medical Association*, June 2, 1906.

Using as his premises the now generally accepted theory that epilepsy is due to the manifestation of a toxin accumulated in the system as a result of the absorption of toxins generated by improper food or tissue metabolism, Laplace considers the locality of the production of this poison in the colon. Consequently, he has resorted to appendicostomy with subsequent irrigation of the colon through the fistula, in one case, with excellent results. He concludes that the treatment is harmless, and is based on sufficiently sound theoretical and scientific grounds; and even should improvement of the epilepsy not result it cannot fail to do good from a hygienic standpoint in affording general relief from constipation, to which most sufferers from epilepsy are subject. The repeated flushings of the colon keep it as nearly empty as possible, and almost eliminate its presence as a reservoir for undigested and putrefying substances. Fear of a permanent artificial opening in the intestine need not be entertained. The artificial fistula closes easily, and, after months of treatment, should one desire to discontinue the flushings of the colon, the natural processes of evacuation are resumed without difficulty. The method is not expected to cure all cases of idiopathic epilepsy; but only those whose existence can be traced to this particular cause. The procedure here advocated should be accompanied by the proper dietetic measures.

[It would seem unnecessary to resort to this not quite harmless, and always unpleasant method of treatment, if careful dietetic rules are followed and frequent high colonic irrigations are given.]

Syphilis of the Stomach. WM. G. MORGAN, Washington, *American Medicine*, June, 1906.

The interesting and important point in connection with this rare malady lies in the possibility of its being mistaken for gastric cancer or benign stenosis of the pylorus. Only 16 cases have been reported in the literature, and of these the majority were post-mortem surprises. That the disease, however, is not as rare as these figures might indicate, is evidenced by a report of Chiari and Holper, who found four cases of gastric lesions in 329 cases of syphilis. The stomach may be affected by syphilis functionally or organically. The organic lesions are generally in the form of circumscribed or diffuse gummata, which break down and ultimately ulcerate. Symptomatically, gastric syphilis may simulate chronic gastritis, ulcer, stenosis or tumor. A considerable proportion of the cases is of the pseudo-cancerous type. All the symptoms of true gastric carcinoma are present, even to the presence of a pyloric tumor. Unfortunately, the only means of diagnosis lies in the response to antisyphilitic treatment. The author reports such a case in which the positive diagnosis of cancer had been made; the symptoms of cachexia, vomiting, absence of free hydrochloric acid, and pyloric tumor were all present. After the administration of mercury and potassium iodid all these symptoms disappeared and the patient at present is perfectly well. The author recommends that all gastric cases which do not respond to ordinary methods of treatment should be given antisyphilitic remedies.

Pneumococcic Peritonitis in Children: a Study. W. FRASER ANNAND, London, and W. H. BOWEN, London, *The Lancet*, June 9, 1906.

The study is based on 4 cases actually observed and 90 collected from the literature. The cases can be grouped in three divisions: the primary, the secondary, and those of obscure origin. In the primary cases, the most likely channels of infection are from the bowel, although pathologically few if any lesions have been noted. The only point that may speak for this source of infection lies in the history of vomiting and diarrhea which these cases usually furnish. Forty-seven of the 90 cases were primary. The large majority of secondary infections (22 out of 30 cases) arise in the lungs. In the others, the source has been traced to the umbilicus, the throat and the middle ear. Two types of the disease have been met with, the diffuse and the circumscribed. In the primary circumscribed peritonitis, three phases have been noted: (1) the meteoric, accompanied by pain, vomiting, diarrhea, rapid pulse and high fever; (2) the exudative, characterized by a localized collection of pus (the situation of the abscess is usually sub-umbilical and placed rather laterally); (3) if untreated, the third stage supervenes—perforation. It is peculiar to note that of 25 cases 7 perforated through the umbilicus; this is eminently characteristic of pneumococcic peritonitis and is an important diagnostic point. The diffuse variety is attended with the characteristic symptoms and signs of peritonitis and usually results in early death.

The diagnosis is usually made in the circumscribed form, the important differential elements being the

situation of the abscess, and if perforation occurs, the fact that it occurs through the umbilicus. The prognosis in the localized form is good, only four cases of 31 resulting in death. In the diffuse form, on the other hand, the vast majority succumb. Treatment consists in laparotomy.

The Surgical Treatment of Chronic Dyspepsia. G. E. BREWER, New York. *New York Medical Journal*, May 19, 1906.

The author limits himself mainly to the discussion of cancer, ulcer and benign pyloric stenosis. The article is a strong plea for early surgical intervention in these cases. In cancer, for instance, the author quotes statistics extensively to show the gradually decreasing mortality of radical operations and the increasing number of favorable end results. The author believes that ulcer of the stomach should be operated upon more frequently than has hitherto been done. Brewer tries to show that the end results of medical treatment of ulcer of the stomach are not nearly as good as are generally regarded. He again quotes statistics to show that although the immediate mortality is low, a large percentage of the recoveries are followed by dyspeptic symptoms. Again, we must remember that a large proportion of gastric cancer cases arise from old ulcers, and this is another argument why they should be more frequently operated upon. The writer concludes, therefore, that if the symptoms due to ulcer are not relieved at the end of 6 weeks of medical treatment, the case should be operated upon, preferably by gastro-enterostomy; also all cases of chronic indurated ulcer and cases of recurrent symptoms after a primary cure. The indications for surgical treatment of benign stenosis of the pylorus are obvious.

Post-Operative Acute Dilatation of the Stomach. JOHN C. MACEVITT, New York. *N. Y. State Journal of Medicine*, July, 1906.

The patient was a woman 29 years of age on whom MacEvitt had performed hysterectomy. Shortly after the operation the patient began to vomit, first greenish fluid, later fecal material. There were eructations of large quantities of gas, accompanied by gradually increasing distension, which on the fourth day attained to such a size that the appearance of the abdomen was that of pregnancy at full term. The bowels moved in small quantities, the temperature rose to 101° and the pulse to 116. MacEvitt decided to operate and on opening the wound found almost the entire abdomen filled with a hugely dilated stomach. On inserting a stomach tube a large quantity of fluid and gas escaped, whereupon the stomach collapsed to its normal size. The wound was sewed up and under repeated stomach washings the patient made an uneventful recovery.

In a short discussion of this malady the author says that the symptom of vomiting is of particular importance, and is characteristic. The vomitus is evacuated in large quantities, and with increasing frequency. The abdominal distension begins in the upper zone of the abdomen and gradually extends downwards. In a thin-walled abdomen the stomach outlines may be plainly seen. The temperature is not usually high, the pulse grows rapid and weak, and the urine is scanty. The differential diagnosis from peritonitis, which this condition simulates closely, can be made as a rule, by the absence of fever and of the rapid and full pulse, and by the general course. The vomiting of acute dilatation is characteristic; the presence of succussion and the dulness in the lower abdominal zone are additional differential points. Finally the stomach tube will almost always reveal the true condition. Treatment consists in the frequent use of the stomach tube, rectal nourishment, and hypodermatic medication. The author thinks that physostigmin, faradism and postural treatment might be tried.

Postoperative Ileus. J. M. T. FINNEY, Baltimore. *Annals of Surgery*, June, 1906.

Finney reports 26 cases of post-operative ileus. He classifies the cases into early (before the wound has healed) and late; also into mechanical, septic (peritonitis) and adynamic (disturbances of innervation or circulation). Mechanical ileus is usually characterized by a later onset, the presence of visible peristalsis, colicky pain, asymmetrical distension, little rise in pulse and temperature. In the septic form the symptoms may be those of peritonitis; when post-operatively the ileus develops without the above symptoms it usually is adynamic. It often is impossible to make an exact diagnosis; in very early cases infection plays the predominant rôle, in later ones adhesions are more often the cause. The author hopes that the opsonic index may prove of service in the differentiation of the various forms, but, at present, the data are insufficient. The indican test is of little value. Many of the symptoms of profound depression are due to autointoxication by poisonous products especially by neurin. Severe symptoms more often occur early when the venous circulation of the intestine is obstructed. Partial obstruction is apt to become complete when some indiscretion of diet increases the production of gases. The formation of adhesions is of special interest and yet no reliable knowledge as to the cause of their appearance or disappearance has been obtained. Our ability to control their formation is consequently very limited—filling the peritoneal cavity with sterile saline solution, application of Cargile membrane, of oil, early catharsis, etc., have all been recommended, but are all of little use. In the 26 cases reported, 22 were operated upon a second time for the obstruction. Sixteen cases followed appendicitis, two were after strangulated hernia, two typhoid perforations, two cholelithiasis, one case each after pyloroplasty, tuberculous peritonitis, volvulus and nephrotomy. The causes of obstruction were chiefly, adhesions (7), kinking (7), bands (3). In eighteen, or 78%, the cause of obstruction was due directly or indirectly to peritoneal adhesions. The seat of obstruction was in the small intestine in twenty cases, pylorus or duodenum three, sigmoid two, ascending colon one. Peritonitis was present at the time of the primary operation in fifteen, at the secondary in eight. In most of the cases the treatment consisted of freeing the adhesions or in performing an enterostomy. Ten patients died. Prompt operation should be resorted to after palliative treatment has been given a fair trial. The prognosis is unfavorably influenced by the presence of infection; in its absence it is excellent.

A New Form of Intestinal Obstruction. The Methods for Preventing a Recurrence of Volvulus of the Sigmoid Flexure. A. V. MOSCHCOWITZ, New York. *N. Y. Medical Journal*, July 14, 1906.

The case which Moschcowitz reports is that of a man 41 years old, who had been operated upon for volvulus of the sigmoid fleure. In order to prevent recurrence, the author sutured the gut to the peritoneum on the left side of the incision, to the extent of about 2½ inches. The patient made an excellent recovery and was ready to be discharged when, 24 days after the operation, symptoms of intestinal obstruction appeared. The abdomen was again opened and it was found that the adherent sigmoid had formed a loop through which a large part of the small intestine had prolapsed and had become obstructed. The intestines were reduced but the patient died shortly after.

Although the possibility of this form of obstruction had been recognized by many authors, this is the first case that has been described. In order to obviate recurrence of the volvulus, various operations have been devised: resection of the gut, reefing of the meso-sigmoid, Roux's operation of suturing the meso-sigmoid to the abdominal parietes, Riedel's operation, consisting in removal of the cicatricial tissue in the meso-sigmoid, lateral anastomosis between the cecum and sigmoid and, finally, the most commonly practised operation, sigmoidopexy. Moschcowitz discusses these various procedures in detail and comes to the conclusion that, after all, the best method is sigmoidopexy. If the general and the local conditions are favorable, the author would not hesitate to resect.

A Self-Retaining Trocar and Canula for the Aseptic Evacuation of Distended Viscera. H. LILIENTHAL, New York. *Annals of Surgery*, June, 1906.

The "visceral evacuation" devised by Lilienthal was designed to overcome the technical difficulties in the way of performing an effectual and aseptic emptying of the intestine or other viscera, as the gall-bladder. The instrument consists of a trocar and canula, the latter having a side branch through which the liquid runs off. The terminal part of the canula is split longitudinally and swings on hinges. After introduction into the lumen of the gut these distal flaps are swung apart and the intestinal wall firmly grasped between them and a collar which is pressed against the outer surface of the intestine and retained by a device similar to the spring of a Murphy button. The trocar is now withdrawn as far as it can be, thus liberating the passage into the lateral branch of the canula. The movable flaps previously mentioned make the opening of the instrument *flush with the wall of the viscus*, which is of advantage when the walls of the gut begin to collapse. To remove the instrument a reversal of the process is gone through. The device is simple in construction and promises to fill a decided want.

Hematoma of the Ovary and Certain Other Closely Allied Conditions. HAROLD W. WILSON, London. *Lancet*, May 26, 1906.

Wilson does not refer to hemorrhages within cysts, but to cases of hemorrhages into the stroma of the ovary proper. The author divides these cases into four groups: 1. So-called idiopathic cases. 2. Cases due to torsion of the pedicle. 3. Toxic cases. 4. Cases of ectopic gestation. In this article the author is merely concerned with groups 1 and 2. These cases usually occur in young women at or about a menstrual period. They may be brought about by some excitement and are particularly common in the days preceding and the months following marriage. The onset is characterized by pain, sudden and severe, referred at first to the epigastric or umbilical regions, finally settling to the affected inguinal region. There is sometimes considerable shock at the onset. With the pain there is uterine bleeding. On examination, the pelvis is found tender, and the abdominal wall rigid. In some instances a tender mass is felt in either fornix. The cases usually get well with a ten days' rest in bed. The author reports eight cases, some of which had been operated upon.

Renal Decapsulation and Nephrotomy in the Treatment of the Serious Forms of Eclampsia. POUSSON and CHAMBRELENT, Bordeaux. *American Journal of Urology*, July, 1906.

The origin of eclampsia from some, as yet unknown, autotoxic agent is accepted. We try to combat the poison in the blood by modifying the diet, opening the emunctories, and eliminating the chief etiological agent, the fœtus. The "lavage of the blood" can be accomplished by blood-letting and by increasing the kidney activity. In toxic conditions with oliguria, retention of urea and its derivations, and presence of albumen, and other evidences of acute nephritis, surgical interference is indicated.

A patient, primigravida, 21 years of age, began to have labor pains shortly before term, albumen in the urine, convulsions and then deep coma. Delivery of the child did not relieve the condition. Two days later the authors saw the patient. She was in deep coma, urine scanty and boiling solid, etc. Double decapsulation was performed, with nephrotomy and drainage of the right kidney. Both kidneys were thickened, hard, brownish in color and bulged out as soon as their capsules were incised. After operation the urinary secretion rapidly increased, and the general improvement kept pace with this change. Complete recovery ensued. Examination of sections from the kidneys showed acute nephritis.

Acute nephritis may be compared to glaucoma. Incision of the capsule relieves the tension, acts as a direct phlebotomy, gives the accumulated exudate and débris an opportunity to escape and allows the renal circulation to resume its normal function. The immediate result is the resumption of renal excretion and the consequent subsidence of the toxemia.

The Treatment of Hyperemesis Gravidarum. W. S. STONE, New York. *New York State Journal of Medicine*, May, 1906.

Stone regards the origin of the trouble as an autotoxic condition. The chief practical difficulty encountered lies in the fact that the profession and the public regard many of the symptoms as purely physiological. Cases with definite brain, stomach, pelvic and other lesions are not included in this paper, and the neurotic symptoms met with are usually the result of the condition, and not an etiological factor. Experimental work, in the literature, shows that there is an increased retention of nitrogen during pregnancy and the emesis is a clinical manifestation of this accumulation. The methods at our disposal to combat such retention are attempts to cut off the supply of the toxin, to stimulate the organs employed in maintaining a normal metabolism, to aid the excretion of the toxin, and to dilute the circulating poisons. Prophylactic measures should begin at puberty for chlorotic women with poorly developed genitals are most prone to the trouble when they become pregnant in later life. Very probably some of the severe menstrual disturbances are also toxic in origin. A complete chemical examination of the urine gives the earliest indication of the serious import of hyperemesis. If urinary changes are present treatment should be instituted at once. Most important in this connection are the following points: 1. Rest in bed, absolute in most instances, at least for a few days. 2. Exclusion of all visitors, even members of the family in severe cases. 3. A milk or broth diet, or absolute withdrawal of all food by stomach in the severe cases, but a liberal allowance of water. 4. Catharsis at the beginning of the treatment with calomel and salines, the salines sometimes to be repeated. 5. Colonic irrigations or rectal injections with normal salt solution. Intravenous infusions in the severest types. 6. Nutrient enemata. 7. Administration of a few doses of opium (hypodermatically or by rectum) well selected as to time. If the symptoms persist, interruption of pregnancy should be resorted to. The author appears to prefer the use of laminaria and to disapprove of rapid dilatation, which is not well born. Ether should be used as an anesthetic. If part of the placenta is retained the symptoms may continue until the uterus is thoroughly emptied.

A Review of Surgical Progress (The Surgical Treatment of Puerperal Pyemia). PROF. F. TRENDELENBURG, Leipzig. *Journal of the American Medical Association*, July 14, 1906.

Trendelenburg speaks especially of the surgical treatment of puerperal pyemia. He points out that at the present time we ordinarily have to deal with pyemia only as it occurs from aural or uterine infection. The surgical treatment of otitic pyemia by clearing out of the thrombosed transverse sinus, with or without ligature of the jugular vein, is well established, the only differences of opinion being confined to details. Why cannot this same plan of surgical procedure be followed in puerperal pyemia with like good results? Even with a mortality of only 50 per cent. under non-surgical treatment puerperal pyemia is one of the most serious and fatal maladies to which women are subject. The as yet limited number of successful cases of ligature of the pelvic veins for this condition indicates that we are on the right track and Trendelenburg believes that the surgical treatment of puerperal pyemia will follow the same road to professional favor as has that of otitic pyemia. The prognosis can be favorable in acute cases only with early operation, as the thrombotic process rapidly extends upward, even to the vena cava, while in the chronic cases its advance may be restricted to the internal iliac and ovarian veins after a lapse of several weeks. Although a sufficient collateral circulation may be established even after obliteration of the vena cava, he would not advocate this procedure. He does advise, however, ligation of the internal iliac and ovarian veins at an early period in acute puerperal pyemia in order to prevent extension upward of the thrombosis. In cases of doubtful diagnosis an exploratory exposure of these veins is in his opinion as justifiable as in cases of abdominal injury or in gastric cancer. The danger of such an operation is not to be considered in comparison with the greater

one that threatens the patient's life from the disease. The relative merits of the transperitoneal and the extraperitoneal routes for the operation are discussed. The former is perhaps the simpler, but it involves the danger of peritoneal infection by the septic material from the veins when the latter are opened accidentally or otherwise, and they cannot be cleaned out thoroughly for this reason. The extraperitoneal operation calls for a much larger incision if the veins are followed up to their full extent, and it is perhaps also more difficult and tedious. The danger to the peritoneum, however, is lessened, and the veins can be opened and cleared out. Experience has not shown the invariable necessity of the latter procedure as practiced by otologists on the sinus; the exclusion of the thrombus from the circulation, by ligation, preventing the contamination of the venous blood, often seems all-sufficient for the purpose. The incision is made as for ligation of the iliac artery, above Poupart's ligament, and then upward to the tip of the eleventh rib.

Tuberculosis and Pregnancy (*Tuberkulose und Schwangerschaft*). A. v. ROSTHORN, Heidelberg. *Monatschrift für Geburtshilfe und Gynäkologie*, May, 1906.

During three years 25 cases of tuberculosis were seen among 1,500 pregnancies, a percentage of 1.06. The age was within the limits of 24 to 44 years. Attempts to discover latent cases by means of systematic tuberculin injections were without result. 64% of the above cases showed distinct increase of their tuberculous affection; 4 died (mortality of 16%).

V. Rosthorn's summary is as follows: Observation extending over some period of time is necessary in order to determine whether the involved area is increasing. The tuberculosis may make its first appearance during the pregnancy (hereditary taint, "anemic" women, apex "catarrh"). On the other hand, several pregnancies may pass without any increase in an already present tuberculosis. Pregnancy is *relatively* without danger in women who have had a stationary, or "relatively healed" process for years, in whom the general nutrition is good, and no fever of hemoptysis has appeared within a year. The some applies to patients who have a recent apex catarrh, if the inflammation is well localized, and in whom no loss of weight or fever has been noted. Cases in which danger is always marked are those in which a florid process, with fever and rapid disintegration, is taking place. This applies also to cases with but slight fever, if the temperature does not disappear with proper hygienic measures (health resort, etc.). When the tuberculosis involves not only the apex, but also the middle or lower lobe of the lung, pregnancy is a serious menace. Likewise, if any of the following complications exist—heart disease; disease of the urogenital tract or of the intestinal tract; in all cases of laryngeal tuberculosis, even if very mild; in severe hereditary taint. In all cases it is well to adhere to strictly expectant treatment at the outset. The hygiene of the gravida must receive strictest attention.

Induced abortion is in every instance far preferable to induced labor, as it is a far less serious interference. A tuberculous pregnant woman, who has survived an induced labor, usually would have been able to survive a normal labor with far less shock and trouble. Induced abortion can, and should be, considered in all destructive processes accompanied by fever; in even slight involvements, should one of the previously mentioned complications (especially tuberculous laryngitis) co-exist; in relatively healed cases, should progressive emaciation persist in spite of appropriate hygienic measures. The future of the child need not be taken into account, because mothers with advanced tuberculosis may give birth to healthy children, and because the transmission of tuberculosis *in utero* is of utmost rarity. There are at present no distinct criteria for arriving at a decision. It is well for an obstetrician to consult with a good internist before taking any active steps.

First Case of Labor Subsequent to a Previous Pubiotomy (*Erster Fall von späterer Geburt nach subcutaner Pubiotomie*). K. REIFFERSCHEID, Bonn. *Zentralblatt für Gynaekologie*, No. 18, 1906.

The patient was a III-para, 36 years old, with a true conjugate diameter of 7 cm. At the first labor a dead child was delivered with forceps at the second, one year previous to the third, a living child was born after subcutaneous pubiotomy. The mother was permitted to walk on the 14th day. During the subsequent pregnancy no incapacity or pain. On admission, it was found that only fibrous union between the severed ends of the pubic bone had occurred, and that during the pregnancy the scar had softened. The conjugate diameter was now 7.5 cm. Twelve hours after labor had begun, full dilatation of the os was complete, but no engagement of the head had taken place. Therefore the Gigli saw was carried around the uncut pubic bone (prophylactically), version was performed, and the extraction readily completed without, however, again performing pubiotomy. The child was alive and unharmed, but not very large. The cleft between the bone ends resulting from the previous operation was found, after labor, to have increased considerably. Normal puerperium and subsequent course were noted.

A Contribution to the Study of the Diagnosis and Treatment of Ectopic Pregnancy. H. N. VINEBERG, New York, *Medical Record*, June 23, 1906.

This paper is based on the study of 53 cases observed in the course of the past seven years. The author combats many of the text-book ideas on ectopic pregnancy; for instance, that there is usually a long period of sterility antedating the ectopic pregnancy; that inflammatory disease of the adnexa is a frequent forerunner of this condition; and that the attendant bleeding is usually darker in color than that of a uterine miscarriage. The three cardinal symptoms of ectopic pregnancy are amenorrhea, irregular uterine bleeding and abdominal pain. The author emphasizes the point that the absence of amenorrhea should not be regarded as excluding the diagnosis of ectopic gestation; this symptom was not present in five cases of this series. In many cases there is a history that the last menstrual period was irregular in amount, duration or continuity of flow. The bleeding in ectopic pregnancy is usually less profuse than in a uterine abortion, and irregular. These symptoms are important differential points. Abdominal pain is almost a universal symptom. It is usually colicky, paroxysmal, and referred to the lower abdomen. In some instances, the pains are described as "labor" or "bearing down" pains. A peculiar fact noted by Vineberg is the rise in temperature, ranging from 100° to 104°, noted in 14 cases. The leucocyte count is of no value diagnostically. Syncope is noted in about 25 per cent. of the cases. On vaginal examination a mass to either side or behind the uterus is felt in the majority of cases.

Differentially, uterine abortion is the condition most frequently to be excluded. The latter is usually not attended by pain. Intraligamentous cysts and acute gonorrheal infections also sometimes require exclusion. The author operated on all but one case; the latter refused operation. One death occurred from anesthesia pneumonia. Most of the cases were operated upon by the abdominal route. Vineberg advises removal of all clots and deprecates unnecessary haste in the performance of the operation. He believes that often incomplete hemostasis is the result of a too rapidly performed operation.

A New Operation for Anteflexion of the Cervix. W. H. BAKER, Boston. *American Journal of Obstetrics*, July, 1906.

The author regards Sims' and Dudley's operations for the cure of anteflexion and sterility as functionally successful, but objects to the mutilation they cause. He has devised a new procedure based upon the fact that the posterior cervical lip is nearly twice as long as the anterior in this condition. In anteflexion the cervix points in the axis of the vagina instead of posteriorly. Baker removes a transverse wedge from the posterior lip of the cervix, as close to the angle of flexion as possible. The wound edges are united with twisted silver wire sutures to ensure close approximation.

According to the author, considerable technical difficulty is encountered in performing this operation. [Another objection that suggests itself to the reviewer is the presence of a transverse scar which may oppose a barrier or obstruction to delivery should pregnancy develop.]

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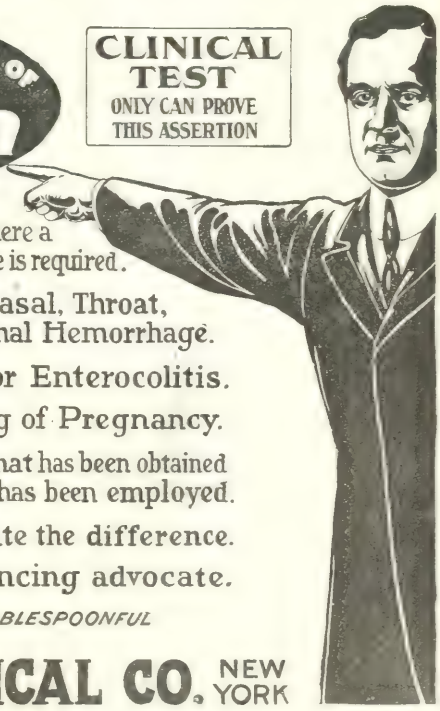

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Urotropin must, however, be absolutely perfect. Many of the preparations on the market are of doubtful value, or are positively injurious.—American Journal of the Medical Sciences, May, 1906.

Dr. William J. Robinson writes in the Critic & Guide, March, 1906, in a paper on "Proprietary Remedies from the Physician's Standpoint":

Urotropin was a distinctly new drug when introduced by its manufacturers, and they and Nicolaier have rendered a real service to humanity. Why should they not derive pecuniary benefit? I am not at all sure that every nondescript brand is as pure as urotropin, and the patient has to pay the same price.

THE PERILS OF WOOD ALCOHOL AND FORMALDEHYDE.

Every package of witchhazel should be carefully tested for *wood alcohol* and *formaldehyde*. These ingredients are very dangerous, *even when used externally*, and in New York State the use of wood alcohol in any preparation whatsoever, is forbidden under a penalty of $2,000.00. . . . *Many unprincipled manufacturers use wood alcohol, some rely on formaldehyde, while again others use a combination of these* with grain alcohol.—*Practical Druggist.*

* * *

Wood alcohol exerts its toxic effect *only less readily when used externally* than when taken into the stomach. Its use in the manufacture of liniments and *other external preparations* is no more to be considered than its employment in the manufacture of essences and similar articles meant for internal consumption.—*Bulletin of Pharmacy.*

* * *

It is reported that the majority of several hundred samples collected of distilled extracts of witchhazel sold in Chicago drug stores have been found to contain *wood alcohol*, instead of grain alcohol, *and even formaldehyde*.. . . . The spirit of intolerance against the sale of preparations containing wood alcohol, *whether for internal or external use*, is constantly growing, and it may be expected that the practice will meet with more and more severe punishment in the future.—*Bulletin of Pharmacy.*

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ANOTHER THERAPEUTIC POINT.

Guaiacol, with or without methyl salicylate, rubbed up in lanolin, will prove promptly efficacious in epididymitis and orchitis. Rub in freely and cover with snug bandage.—Geo. H. Candler, in *Am. Jour. of Clinical Medicine.*

HOT WEATHER DIET.

In hot weather the average person takes too much food and particularly an excess of meat. The digestive organs are kept at hard labor assimilating a heavy diet and forcing every organ in the body to do an unnecessary amount of work. The digestive apparatus faithfully performs its function until insulted nature rebels and enforces a period of rest for the exhausted organs. Another danger from eating too much meat in summer is that of ptomain poisoning following the ingestion of tainted meats.

During the hot months the question of diet is largely one of the class of food material best adapted to sustain mental and physical energy without unduly increasing the production of heat.

A diet of milk, eggs, fruit and EGG-O-SEE is most suitable for the summer months. EGG-O-SEE with cold cream makes a delightful basis for every meal, as it offers the full food value of wholewheat.

The Egg-O-See Cereal Co., of Quincy, Ill., will send on request a full size package of Egg-O-See to any physician.

ONE METHOD OF SUBSTITUTION.

We are creditably informed that representatives of certain Eastern Chemical houses are trying to introduce a mixture claiming that it contains the same ingredients as Neurosine.

We have worked up a large demand for Neurosine exclusively with the Medical Profession; it is evident they are trying to reap where they have not sown. Physicians will readily recognize that the intention of the parties referred to is to encourage Substitution; therefore we deem it only necessary to mention this fact to Doctors, as we believe they would not knowingly allow their prescription to be filled except with the Identical Drug prescribed. It is for the Profession to Determine The Efficient Results they have obtained in the use of Neurosine and not to be induced to try that which is claimed to be "just as good" (TALK is Cheap).

The satisfactory results Doctors have obtained with Neurosine in cases where indicated will not, we think, warrant them changing to an untried mixture, or substitute, more especially when they Only Claim the Same Formula As Neurosine.

Doctors can rely on Neurosine, Dioviburnia and Germiletum, which we manufacture exclusively for Physicians to prescribe, being always kept up to the high standard of efficiency.

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CATARRHAL AND INFECTED CONDITIONS OF THE MALE AND FEMALE GENITAL ORGANS—VAGINAL, URETHRAL, RECTAL, NASAL, ORAL, PHARYNGEAL, INTESTINAL, AS WELL AS PRICKLY HEAT, POISON OAK, LUPUS VULGARIS DECUBITUS, BURNS, ULCERS, EXCORIATIONS, ABRASIONS, AND OTHER DISEASED CONDITIONS OF THE SKIN.

TYREE'S ANTISEPTIC POWDER

TWO SIZES
25¢ AND $1.00

Antiseptic Saving

TYREE'S PULV. ANTISEPTIC COMP. does not contain water, alcohol or any "filling;" patient adds that. He does not pay for anything that is not necessary. 25 cents' worth will make 2 gallons of Standard Antiseptic Solution that would otherwise cost $1.00 or more. Among Genito-Urinary Specialists, TYREE'S ANTISEPTIC POWDER is preferred to the usual remedies on account of its simple and effectual action directly on the mucous membrane of both male and female

GENITAL ORGANS

This is the most economical means at hand for getting the full therapeutic value out of the best known agents in LEUCORRHOEA and GONORRHOEA. It is also the safest and surest means. Literature descriptive of its application together with clinical reports and a most interesting booklet entitled, "George Washington's Physician, Their Friendship and His Treatment During the President's Last Illness," will be mailed free of cost upon request.

J. S. TYREE, Manufacturing Chemist
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TWO KINDS OF HYDRIODIC ACID.

Gardner's, prepared by their original process, from pure resublimed iodin, the use of which has made hydriodic acid famous, and imitation products, made from iodid of potassium and tartaric acid, by a slight modification of the old crude process suggested in 1837 by Buchanan. The latter is the kind your druggist will dispense if you do not specify "Gardner's."

WEAK NERVES.

Passiflora is the best medical compound for the relief of Neuralgia, Grippe, Headache, Convulsions and Sexual Weakness, because, being the tincture of the May-pop, which contains a greater sedative value than other plants, it possesses the antispasmodic action of cimicifuga and the cathartic and diuretic action of colchicum. Producing a stimulating and curative effect on the entire nervous system, it controls every disease arising from this source. By a great number of physicians, Passiflora is administered daily to all their pregnant patients, both during the latter part of gestation and the period succeeding child-birth.

Passiflora is a true tonic and sedative to the reproductive organs, and only the most natural and healthful effects follow its use.

ELIXIR MALTOPEPSINE (Tilden).

Digests albuminoid, fibrinous and amylaceous food. An ideal vehicle and adjuvant, at the same time, a stomachic of great value. Absolutely digests all kinds of food.

Each fluid dram contains:

Glycerophos. Calcium	.....	gr. 1
" Soda	.....	gr. 2
" Iron	.....	gr. 3-16
" Manganese	.....	gr. 1/8
" Strychnin	.....	gr. 1-60
Maltopepsine	.....	grs. 10

Is indicated in cases of impaired and faulty digestion, general debility, neurasthenia, chlorosis, gastric hyperæsthesia, ataxia, phosphatic albuminuria, acute sciatica, cachexia, etc.

Dose:—One to two teaspoonfuls in water three times a day before meals, or as indicated by the physician.

Write for samples and literature.

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Bell & Company,
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Gentlemen:—Kindly send me one thousand tablets Papāyans Bell. I find them indispensable in certain conditions of indigestion.

Yours truly,
(Signed) J. A. Miller.
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ANTISEPTICAL SURGICAL DRESSING

NON-TOXIC AND NON-IRRITATING.

A New and Definite Synthetic Compound of Cinchonine Iodosulphate, Thymol Iodide, Bismuth Oxyiodide, Boro Formaldehyde, Phenylacetamide with Phenic Acid. Liberates Iodine, Formaldehyde, Thymol and Phenic Acid. Acts as an Efficient Local Antiseptic, Alterative, Astringent, Analgesic and Dermal Tonic.

SAMPLE TO PHYSICIANS ON REQUEST.

ORIGINATED AND INTRODUCED BY

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BRANCHES: NEW YORK, CHICAGO, NEW ORLEANS.

The Dietetics of Gestation

This is a subject of supreme importance to the coming mother and to her offspring.

"The diet should be plain and easily digested, but nutritious," says a well-known authority. And this is as far as the consideration of the question by the family physician frequently goes.

But, is it not well worth his while for the doctor to specify what is needed in pregnancy or other conditions that he is called on to direct? The matter of careful attention to itemized detail in selecting a dietary for his patients, is now greatly simplified by the manufacture of a variety of "prepared foods," which contain, in varied proportions, the "physiological ingredients" required in the true food—to replace waste and store up energy.

The pregnant woman has need of such "physiological ingredients" for the repair of tissue through her own healthy activity, and in addition, to furnish nourishment through her own blood-making organs, for the highest development of the fetus.

The life-struggle of the future offspring is undoubtedly influenced for good or evil by the food consumed by the pregnant woman. The mental and physical make-up of the child are, who shall say to what degree, influenced by the same thing.

If the food consumed has the proper elements for blood-making, tissue-building, energy-conserving, and is of such easy digestion as to preclude disturbance of the digestive and assimilative functions; the mother is most apt to be of a cheerful, even-tempered, hopeful mental attitude, and will reflect these desirable attributes upon her child.

GRAPE-NUTS is highly nutritious—is made of whole wheat and barley. It is fully cooked with just enough heat and plenty of time to develop the soluble diastase from the cereals used in its composition. This produces energy—stamina, physical affirmativeness. It contains 12% of protein—blood-making pabulum, with the necessary percentage of alkaline salts required by the tissues. It is in granular form—requires chewing, so essential to the promotion of normal digestion from the very entrance of food into the mouth. Lastly, GRAPE-NUTS contains 2.[illegible]% crude fibre (cellulose) which stimulates peristaltic action in the intestines. This tends to prevent that most common condition of the pregnant woman—constipation.

GRAPE-NUTS is a concentrated food, also—does not require a distressing amount in [illegible] to secure the requisite amount of pabulum.

A trial package for a physician's own testing free upon request. In this way a statement of scientific fact may be tested clinically.

Postum Cereal Company, Ltd., Battle Creek, Mich.

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Many specifics have been advocated as a sure cure; very few, however, have been found satisfactory. An exception may be claimed in favor of Tyree's Antiseptic Powder, says Dr. M. E. Chartier, Faculté de Paris, France, as it possesses curative as well as preventive properties. Besides, it is quite inexpensive, five or six tablespoonfuls of the powder in a gallon of water are quite sufficient for an ordinary sponge bath, which will act as a preventive. A larger percentage may be necessary to cure the most troublesome case. There are to be found in the drug stores many preparations containing boracic acid and talcum compounds. These preparations, generally used in a dried state, have the great inconvenience of clogging the pores of the skin. This is not the case with Tyree's Antiseptic Powder, as it acts as a deodorizing, stimulating agent. Sample and particulars from J. S. Tyree, Chemist, Washington, D. C.

CHOLERA INFANTUM—(GASTRO ENTERITIS).

The common affection in children in summer, known as summer diarrhoe, is much benefited by Peter's Peptic Essence Comp. It usually follows an attack of acute indigestion. It is also known as Cholera Infantum and Gastro Enteritis. It affects both the large and small intestines. Peter's Peptic Essence Comp. relieves the indigestion, prevents the putrefaction of food, and by its antiseptic power, prevents and relieves the irritated condition of the large intestine. It will be found of signal service, especially in those children who are fed on artificially prepared food, preventing this trouble and rendering the food easily assimilated.

THE AUTO FOR PHYSICIANS.

The Oldsmobile Runabout possesses all the advantages of an ideal car for doctors.

It will run longer with a minimum amount of care than any other car with which we are acquainted. It is easy riding, void of complicated machinery and when equipped with reliable tires like the Diamond will give perfect satisfaction.

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The system of Messrs, Howard, Holles and Heweson, 32 Broadway, N. Y., of treating every account individually and not drumming the debtor with form letters, is productive of the best results and maintains the friendly relationship between doctor and patient. Write them for particulars.

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(Contains the active principles of Kava-Kava dissolved in East India Sandalwood Oil)

The Best Anti-gonorrhoic

Diminishes the discharge of pus, relieves pain, markedly shortens duration of the attack, prevents complications. Heretofore involvement of the posterior urethra occurred in 75% of all cases, after Gonosan in only 6%.

DOSE: Two capsules four to six times daily after meals.
Restrict diet and quantity of liquids. No alcohol.

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The treatment of spinal deformities is best conducted by such appliances as will give the proper support without taxing the vitality of the patient by added weight. The Philo-Burt Mfg. Co., 139 20th street, Jamestown, N. Y., manufacture an ideal supporter which weighs only 16 ounces. Each appliance is made for every individual case and gives an even, continuous and perfect support for the treatment of spinal curvatures.

Hypodermic needles manufactured by the Randall-Faichney Co., Boston, Mass., posses many advantages over the cheap commercial goods offered. If you will send them your name and the name and address of your instrument supply house, they will send you one of their needles which will readily convince you of their superiority.

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We are now prepared to furnish our readers with the surgical suggestions which have appeared during the last fifteen months in the AMERICAN JOURNAL OF SURGERY in suitable form for preservation. They are printed upon heavy India paper in contrasting colored inks and bound in cloth. Price, postpaid, fifty cents. SURG. PUB. CO., N. Y.

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Gray's Tonic has become the standard remedy for anaemia, malnutrition and nervous exhaustion, from whatever cause.

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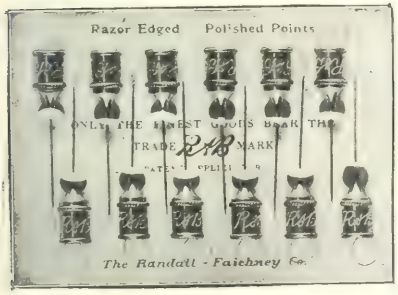

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That the ordinary commercial hypodermic needles have been getting less and less satisfactory, while the medical profession has become more intelligent and exacting in its requirements, we have developed the ***R&B razor edged, polished point hypodermic needle,*** the most perfect ever produced.

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THE BEST MATERIALS.
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And in order to be sure
We Test Every Needle for Strength and Leakage.

And by a new and original process, put on points that cut rather than tear.

They cost more money, but they give the service, and the increased comfort to patient and practitioner justifies the outlay.

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It is your safeguard against imitations.

Ordinary gauges and lengths—$1.50 per Doz.

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On receipt of your name and address and the name of your surgical supply house we will send you, without charge, a sample of this R. B. needle.

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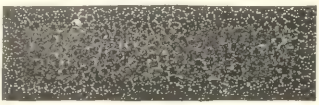

The Ideal Splint Material.

Xylonite (of the flexible variety) is superior to pasteboard, felt, wood, metal, hard rubber or papier-mache for splint purposes. It can be readily adapted to the outlines of the limbs by soaking in hot water. When dried again it retains the form of the part to which it is applied. When thoroughly softened it replaces leather for making capsules and mobilizing splints for diseased joints. It can be kept clean and, unlike felt or wood, can be easily sterilized. Splints made of this material do not rust like metal splints. When applied directly to the skin Xylonite does not irritate, as it is absolutely smooth. Stains can be washed off with soap and water, and greasy matter with alcohol or ether. An important feature about Xylonite is that in compound fractures windows can be cut to dress the wound without affecting the rigidity of the splint. Price, $1.00 for sheet 22x34 inches.

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It has an aluminum reflector which can be easily removed for cleaning. It gives a clear, white light
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It burns kerosene (coal oil).

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Yours truly,

X-RAY BURNS.

At the 337th regular meeting of the New York Dermatological Society, held November 28, 1905, the subject of X-ray burns was taken up, and Dr. Henry G. Piffard, Emeritus Professor of Dermatology in New York University, said, according to the Journal of Cutaneous Diseases, "that he had obtained the most benefit in treating these conditions from Antiphlogistine, chloride of zinc, high frequency current and ultra violet rays."

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An effervescing tablet of Lithium Tartrate 3 grains and Cystogen 3 grains, has recently been placed on the market. Insomuch as the idea of this combination was given us by observing the large number of physicians using Cystogen with Lithia, in Gouty and allied affections, we bespeak for this tablet an extensive use. Put up in packages of three tubes containing three dozen effervescent tablets. Samples and literature on request. Cystogen Chemical Company, St. Louis, Mo.

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IS A NUTRIENT
because it nourishes.

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because it alters the course of morbid conditions and promotes metabolism.

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because it improves the tone of the tissues and restores energy and strength to debilitated subjects.

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because it augments the quantity of hemoglobin in the blood and restores the quality of the tissues.

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SURE AND SAFE LAXATIVE
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THE RÔLE OF IRON IN THE NUTRITIVE PROCESS.

It is an established custom of physicians to administer iron whenever a patient with pale, waxy, or sallow complexion complains of extreme exhaustion, muscular feebleness, easily accelerated pulse, aphasia, anorexia and the several symptoms which constitute the characteristic issues of a qualitative or quantitative reduction of the corpuscular elements of the blood.

Such symptoms are unerring indications of anemia, and iron is beyond dispute a cure for that disorder. But while the chief therapeutic property of iron is that of an anti-anemic, the subordinate, or collateral, effects of the drug are manifold, and are worthy of far more consideration than they usually receive.

As a hemoglobin-contributor and multiplier of red blood corpuscles, iron will doubtless forever stand supreme, but its utility is by no means restricted to anemic conditions, for one of the chief effects of iron —one quite often lost sight of—is its influence upon nutrition.

The primary effect of iron is a stimulation of the blood supply. This results from invigoration of the blood vessels. As a consequence of a more active blood stream, the digestive capacity is increased and the nutritive processes are correspondingly improved. Subsequently, iron increases the amount of hemoglobin contained in the red corpuscles. This imported hemoglobin converts the systemic oxygen into ozone, and thuswise oxidation, upon which nutrition directly depends, is restored to its proper standard.

It is impossible to emphasize the fact too strongly that it is necessary to do more than increase the appetite to correct nutritive disturbances. A voracious appetite does not necessarily imply an extensive appropriation of nutriment. On the contrary, it is commonly observed that individuals who eat ravenously suffer, the while, a progressive loss in physical weight and strength, even in the absence of all exertions that might account for such losses. And while it is obviously needful to relieve the existing anorexia in order to arrest a loss of weight, it is likewise essential that the capacity to properly digest food be fully restored before the nutritive processes can proceed in befitting order.

The manner in which iron begets an increase in appetite has only recently been perfectly understood.

Rochester Sterilizing Outfit

Fills the long felt want of every Physician who appreciates the advantage of having three great necessities ready for use at the instant required.

It combines An Instrument Sterilizer, A Dressing Sterilizer, and A Water Sterilizer **all in one**

Heated by gas or gasoline; either style of burner is furnished; or a shelf for Primus oil stoves, as you prefer. The neat, attractive appearance of the strong, heavily enameled frame to which the Sterilizers are fitted makes a handsome addition to any office. Your Instrument Dealer will tell you about it, if you ask; or you may address the manufacturers

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Inestimable value for Reference; Highly Recommended; large type; octavo, 346 pages. Second Edition; cloth, **$1.00.** Paper covers, **50** cents, postpaid.

PRACTICAL SCIENCE CO., 108 Fulton Street, New York

The earlier observers entertained the belief that an increase in appetite resulted from the mechanical effect of iron, and that this mechanical effect never manifested itself unless the drug was administered in some acid form. Later investigators advanced the theory that this mechanical effect could be secured by rendering the drug either strongly acid or alkaline. Recent observations have completely disproved the accuracy of both of those theories by inviting our attention to the indisputable fact that a neutral preparation of iron will relieve anorexia with greater celerity than will either an acid or an alkaline one. From the information gained from these observations, we are impelled to admit that the increase in appetite attending the employment of iron is due solely to the increased oxidation induced by its entrance into the blood stream. Accepting this as being true, we can readily understand the manner in which iron exerts its happy effect upon the nutritive processes.

The aforestated facts compel the admission that that preparation of iron which enters most rapidly into the blood stream is the one capable of producing the best results in all disturbances of nutrition. Acid preparations of iron diminish the alkalinity of the blood, thus depressing the distribution of nutriment, and alkaline preparations of the drug offend the mucous lining of the alimentary tract. For these reasons it is consistent with logic to extend prefer-

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Is a Remarkable

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It relieves itching and burning at once, controls inflammation and rapidly promotes the process of healing. It is an ideal antiseptic dressing for burns, and raw surfaces.

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IN ALL CONDITIONS OF

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The True Hepatic Stimulant and Eliminant

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restores normal functional activity of the Hepatic Cells. It does not irritate or otherwise act injuriously under continued administration. ¶ It corrects Acid Intoxication by removing its cause.

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Superior to Bi-chloride of Mercury as a germicide for washing the hands and sterilizing the field of operation, as it is so diffusive it reaches and destroys pathogenic germs in the folds of skin, around the hairs and under the nails, where bi-chloride reaches them with difficulty.

Excellent in the bath, quickly relieving prickly heat and absolutely destroying odors from perspiration.

As a lotion in ivy poisoning, mosquito bites, hives, eczema, etc.

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ment to that preparation of iron which is neutral in reaction. That preparation is the Pepto-Mangan (Gude).

Pepto-Mangan (Gude) is unquestionably the form of iron most closely resembling that which is native to the economy, and the striking affinity for it displayed by the circulating fluid causes us to concede that it possesses desirable attributes not common to any other preparation of the drug. Whence we take it that it is the precise form in which to administer iron when a correction of nutritive deficiencies is the end to be achieved.

In those conditions of weakened digestive power where the function is unable properly to take care of the food supply; when to administer the ordinary forms of iron would be but to increase the digestive disturbance, Pepto-Mangan (Gude) may be prescribed without apprehension, as the preparation is tolerated by the weakest stomach. Being practically predigested, Pepto-Mangan is immediately absorbed by the mucous membrane and taken up by the blood without the necessity of the weakened function being called upon to prepare it for assimilation, and therefore the entire system, including the digestive function, is strengthened and reconstructed. As a nutrient tonic in digestive disorders Pepto-Mangan (Gude) has no equal.

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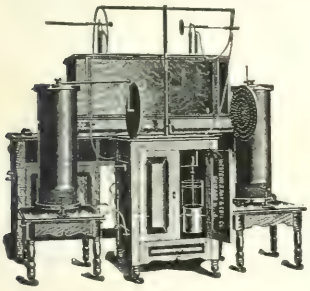

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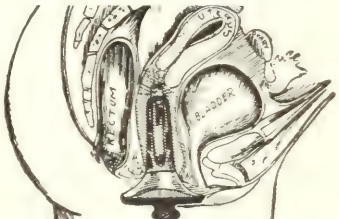

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